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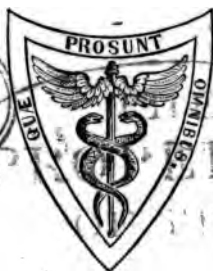
FEMALE DISEASES.

BY

EDWARD RIGBY, M. D.

ETC. ETC.

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS;
SENIOR PHYSICIAN TO THE GENERAL LYING-IN HOSPITAL;
EXAMINER IN MIDWIFERY AT THE UNIVERSITY OF LONDON.



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OF NORWICH,

This Work

IS AFFECTIONATELY DEDICATED,

BY THE AUTHOR.



P R E F A C E .

THE following observations on uterine and other female affections, have no claim to being a complete work on the diseases of women. I have, as far as possible, strictly adhered to the precise meaning of the title page, feeling convinced that if I had attempted to render the work *complete*, I should have incurred a more dangerous error by rendering the details incomplete.

I do not offer it as a class-book to those who are entering the medical profession, and whose studies must necessarily be chiefly, if not entirely, devoted to preparing themselves for their different examinations; but I venture to offer it, more especially, to that large portion of my professional brethren, who, being engaged in general practice, have not been able to devote their special attention to a class of affections which, nevertheless, must frequently come under their notice.

The work is strictly *practical*; and I have endeavored throughout, as far as I could, to bear this in view. I have, therefore, devoted what may appear an unusual amount of consideration to the functional de-

rangements, particularly those of menstruation; not only because they are affections of every-day occurrence, but because I am particularly anxious that their close connection with the general health, and its various conditions, especially as regards the chylopoietic viscera, should be thoroughly understood; being convinced that on a right appreciation of this, depends not only their correct diagnosis, but also the principles of their successful treatment.

I have devoted separate chapters to the consideration of these subjects (Amenorrhœa, Dysmenorrhœa, &c.), solely in deference to a long-established custom, which in former times was a necessity, when their nature and essential causes were imperfectly or erroneously understood, and which has been sanctioned by force of habit; but I feel assured that my readers will agree with me in the conviction that the time will come when these terms, as well as that of leucorrhœa, will no longer designate distinct affections, but will be classed with such symptoms as pain, rigors, expectoration, &c.

Neither do I consider that organic disease of the female generative organs is to stand as an exception to the importance of constitutional treatment; for I look upon it (to use an admirable expression of Dr. Latham's, on pulmonary consumption), as "no more than a *fragment* of a constitutional malady." The great additions which have been made to our pathological knowledge of late years, by means of microscopic and chemical research,

fully warrant my application of the above expression to these diseases.

It may be objected that I have been guilty of a serious omission in not devoting a special chapter to the consideration of *Metritis*, which forms such an extensive subject in the French works; but in answer I must confess that I have not seen inflammation of the womb in the unimpregnated state as a primary disease, although as an *effect* and *symptom* of other conditions it is common enough. And it has been my endeavor, whenever I have alluded to an inflammatory state of the uterus, to show that, in most cases, where the *cause* of it has been correctly ascertained and properly treated, this, like many other effects, will subside without trouble.

As further illustrations of the subject to which this work is devoted, I have occasionally referred to the series of cases which I have published in the *Medical Times* during the last twelve years.

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THE
PROPERTY
OF THE
DISEASES OF WOMEN.

CHAPTER I.

AMENORRHŒA.

AMENORRHŒA—absent or defective menstruation—may occur under a variety of circumstances, which will require a separate consideration.

It may have been *retarded* by imperfect development and general debility.

The catamenia may be *defective* or entirely wanting, from a congenital defect of those organs (ovaries, Fallopian tubes, and uterus) upon which this function essentially depends.

Although naturally secreted, they may have been *retained*, from some obstruction in the passages through which the discharge takes place.

The menstrual function may have been established naturally, and carried on regularly for some time, when it may become *suspended* or *suppressed*.

In the first case, when the appearance of the menses has been *retarded* by imperfect development, we find that the various changes in the system connected with puberty have not been effected, although the patient has attained an age at which they ought to have taken place. In other words, she is still a child, when she ought to have become a woman. Instead of having taken a fair amount of growth, the form becoming more expanded and robust,

and the breasts developed, the frame is delicate, the circulation feeble, the growth stunted. The group of changes which constitute puberty, have either not appeared, or have done so in a defective and imperfect manner, and among others the menstrual function has been delayed. It is a case of sluggish power and constitutional debility, and as such does not usually demand much active treatment: good air, plain nutritious food, early hours, active exercise, and attention to the bowels, will usually enable the system to gain sufficient strength to effect those various changes of growth and development on which the establishment of this periodic function depends.

When the powers of the system are more defective, we find this condition chiefly marked by the torpor and derangement of the chylopoietic viscera, and it is well known that where this is the case, the general tone and activity of the different functions become greatly depressed. The bowels are confined and unhealthy; the liver torpid; the urine high colored, loaded, and probably scanty; the skin dry and harsh, or cold, moist, and clammy; the face pale and sallow; the pulse feeble and easily excited, with occasional palpitation; the respiration short and imperfect; the tongue loaded with a thick yellow fur, through which the red elongated papillæ frequently project—or it is pale, large, and flabby, and generally indented at its edges by the teeth; the breath foul.

It is during this struggle of the system that we meet with a variety of affections which are very difficult to treat, such as violent headaches, different modifications of chorea, or even of epilepsy, eruptions of the skin, &c., which are evidently connected with and dependent upon the state of the patient's general health. When the powers of the system are sufficiently established to complete the process of puberty, the catamenia will probably appear, and these disorders usually cease, but I think it is a question whether they have ceased from the relief produced by the appearance of the discharge, or in consequence of the establishment of that amount of health and tone in the system which are necessary for the due

performance of its various functions. It must not, however, be supposed that in every case of tardy menstruation, the patient is diminutive in form and stunted in growth: this form of amenorrhœa is frequently seen in girls who have taken a rapid start in their growth at this time—who have, in fact, “overgrown themselves.” The demand on the powers of the system, for the purpose of effecting the rapid increase of stature, renders it unable, for the time, to establish those functions of the uterus which otherwise ought to have commenced.

As the patient's strength increases, in like manner do those of passive congestion and fulness become more evident. A change is gradually creeping over her, and a new character of symptoms developing itself;—what, a little while ago, was a case of mere atony, debility, and torpor, now begins to exhibit, although imperfectly, evidences of congestive action. The circulation is stronger, but unequally distributed; the headaches, though probably not more severe, are accompanied with heat of head and flushing of the face, but it is rather of the purple color which characterizes passive congestion. Then she begins to feel pain of the back and loins, extending round the pelvis and down the thighs, with a sense of weight and stiffness. These local symptoms may be followed at once by the catamenial discharge, or may subside without any appearance, and return again in four, five, or more weeks, and this be repeated until the system has attained the necessary amount of strength to establish the discharge. These periodic exacerbations, or attempts of the system, are called *Molimina Menstruationis*.

The interval between the next appearance of the catamenia, will vary very considerably, depending in great measure on the patient's strength. As this improves, the intervals become shorter and more regular, until the function is fairly established.

When the powers of the system are more feeble, and therefore unequal to struggle against the depressing effects produced by the torpor and derangement of the digestive organs which attend this state, the appearance of the patient becomes still more unhealthy; there is a dark

lead-colored ring beneath the eyes; the pallor of the face assumes a peculiar sallow color, which, from its greenish tinge, has obtained for this condition the name of "green sickness," or *Chlorosis*. Secondary, as well as primary assimilation is defective—emaciation and debility advance at nearly an equal pace. There is a constant weariness and aching lassitude of the limbs, which incapacitate her from any exertion, and induce a disproportionate amount of fatigue, from which she appears but little relieved, even by a long rest. The sleep is disturbed and restless—sometimes unnaturally heavy. The bowels are obstinately constive—the evacuations very unhealthy; there is constant rumbling of flatus—the breath is fetid—she has a bad taste in her mouth—the tongue is foul—the powers of digestion almost suspended—the appetite fails, or is capricious, and frequently exhibits an abnormal perversity, in unnatural craving for things which are not articles of food, and which, under ordinary circumstances of health, would create a sensation of disgust; these are usually of an antacid absorbent nature, such as whiting, chalk, slate-pencils scraped into powder, cinders burnt to a white ash, &c.; and, probably, in some cases, it is an instinctive longing to satisfy the uneasy sensations of a disordered stomach; in other cases, it is evidently connected with the morbid imaginations of a disordered mind, seeking unnatural gratification from what, in a state of health, would produce loathing. In either case, the patient is aware that she is doing wrong, and uses concealment in the endeavor to gratify her depraved appetite.

The circulation becomes more torpid and unhealthy; the nervous system is greatly depressed; she feels incapable of mental or bodily exertion. Palpitation and breathlessness are excited by the slightest exercise, and are frequently accompanied by hysteric tears and sobbing. The depression of mind is most painful, and sometimes verges upon actual melancholia; indeed, the characters of the general health in melancholia have a strong analogy to the condition which I am now considering; there is the same torpor of the digestive organs, the same

unhealthy condition of the primæ viæ, and the same loaded urine, usually with excess of urea, which is so constantly observed in melancholia.

The condition of the system is approaching to that of general cachexy; the feet swell, the eyelids after sleep are cedematous; she has a short barking stomach cough, which, from her debility and wretched appearance, easily gives rise to the suspicion of pulmonary mischief.

"The causes of this disease" (says Dr. Locock, in his admirable article on this subject, *Encyclopædia of Med.*) "may be shortly stated as all those which depress the vital powers—viz., a previous delicate and unhealthy childhood; insufficient or improper food; want of pure air and exercise; too close confinement to study in schools, or to labor in manufactories; depressing passions of the mind, &c."

The above enumeration of the causes of this form of amenorrhœa, viz., *retarded menstruation*, points out the indications which are to guide us in its prevention and treatment. They are, not to stimulate the uterus to greater activity by certain medicines, which, however dissimilar in their nature and modes of action, have been brought under one denomination—viz., Emmenagogues. Idiopathic amenorrhœa arising solely from suspended uterine function, without the concomitant circumstances just alluded to, is, to say the least, a very rare affection. The lapse of years has tended not only to confirm this opinion, but also the suspicion that where it has been supposed to exist, the fact has been attributable to the circumstance that the cause had not been rightly ascertained. A passage in Dr. W. Hunter's Lectures strikingly confirms this view: "Now, my opinion with regard to the management of the menses is, that you should pay no regard to them, but endeavor to put her to rights in other respects. If you cure the other disorders, you cure the irregularity of the menses, *which is the consequence and not the cause of her complaints.*"

Dr. Marshall Hall also, in his *Commentary on the Diseases of Females*, says: "Are the impeded functions of the uterus a cause of chlorosis, or are they the effect only?

I imagine the latter. The state of the circulating fluids is probably deteriorated from defective digestion and assimilation, and this deteriorated condition of the blood probably becomes a cause, in its turn, of impaired vital energy, the heart and brain being imperfectly stimulated." The catamenial discharge may be considered as one among many other functions which indicate the state of the general health. These various functions are performed in an effective and regular manner when the powers of the system are fairly up to the mark. No function appears to be so subordinate to, and strikingly influenced by, the great processes of the system, as that of menstruation. The tone of the circulation, the healthy state of the digestive organs, &c., exert a remarkable influence upon it. The circumstance also, that when established, it acts as a periodic relief or safety valve to the system, shows that it may, in some measure, be regarded as an index of the tone, vigor, and power of a woman's health, and any deviation of the one will be attended with a corresponding fluctuation of the other. We are therefore justified in looking upon the functional derangements of menstruation, not as specific local affections, but as the local manifestations of certain conditions of the system. Our treatment ought, therefore, to be what is called "*constitutional*," or in other words, directed to the state of the general health; and, with certain few exceptions, the local treatment of these derangements must be secondary to the constitutional.

Amenorrhœa, like the other functional derangements of the uterine system, is, in fact, a *symptom*, as well as an effect, of general derangement; and it behooves the practitioner to look beyond the mere local affection, and carefully investigate the abnormal or defective actions of the system upon which it essentially depends. To use an admirable expression of Dr. Latham's upon the subject of Tubercle, it is but a fragment of a great constitutional malady.

In our treatment, therefore, of this form of amenorrhœa, our first object must be to restore the chylopoietic functions to a healthy state. The medicines indicated will be

of an alterative and laxative character, not only to clear the intestines of their unhealthy contents, but to rouse the liver to greater activity, and relieve the sluggish circulation and engorged vessels.

Equal parts of pil. hydrarg. and extr. coloc. comp., with or without extr. hyoscyami, should be given at night, and a draught of sodæ potassio-tart., or potassæ sulph. with manna and pulv. rhei, the following morning; and, if necessary, made more active by the addition of some tinct. sennæ comp. The exhibition of saline medicines, during the day, is useful at this early stage, for they undoubtedly tend to purify and redden the dark unhealthy blood, and restore it to a healthier condition; they promote the excretory functions, which we are anxious to rouse to greater activity; they diffuse a genial glow over the system, and lessen that weary sense of aching lassitude which is so exhausting and depressing to the patient.

If the papillæ of the tongue be red and prominent, and she complains of tenderness at the epigastrium on pressure, a sinapism applied to this part gives great relief, not merely locally, but generally; it rouses the circulation, and seems to equalize its distribution over the frame, for the extremities become warmer and the headache is relieved, and the action of the medicines promoted. For a similar reason, the feet should be put into a hot foot-bath, up to the knees, every night, and, if necessary, strengthened by the addition of some mustard.

The pills should be repeated every night, for three or four times, followed by the rhubarb draught the next morning, after which they should be given every other night for three more doses, and the morning draught repeated daily, unless its action be too brisk. By this time a large quantity of unhealthy fecal matter will probably have been removed. The complexion begins to lose its dusky sallow hue, and becomes clearer and brighter. The very expression of the patient's face is improved; the apathetic listlessness, the nervous timidity have cleared away, and looks of intelligence and animation have taken the place of dulness and depression.

Early hours must be insisted on. She should sponge herself from head to foot every morning with cold or tepid water, according to the season of the year, and use active friction afterwards with a rough towel. The effects of these means will be still further improved by friction with a salt towel, when the skin is dry; it produces an agreeable glow, and greatly increases the reaction of the cutaneous circulation, and is, moreover, an excuse for a little more exertion.

It is of the greatest importance that the extremities should be kept warm by active exercise, and that she should wear warm clothing, should the season of the year require it;—indeed, unless it be actually summer weather, she should be clothed from head to foot in a warm elastic merino dress next the skin, and active exercise enjoined two or three times daily. It is a stupid and cruel error to take a young growing girl a long monotonous walk at a slow pace, as is the fashion in most girls' schools; the fatigue is infinitely greater, and in all probability she returns with her extremities just as cold as when she set out. A brisk half-hour's walk, sufficiently quick to excite the respiration, will be, at first, as much as she is equal to; but this should be gradually lengthened as her strength increases; she should also be encouraged to join in cheerful active games at home, such as battledore and shuttlecock, the circular swing, &c.

Horse exercise, if not used as a substitute for walking, is desirable, as it rouses the circulation powerfully; but we quite agree with the remarks of an eminent authority (Parry's *Elements of Pathology and Therapeutics*), that "it is usually a mere apology for the want of that exercise which Providence evidently intended that man should take by means of his own limbs, and not those of another." "Many persons, indeed, assert their inability to walk to any extent, or to employ any other active exertion—it heats, it fatigues, it pains them—it produces a thousand real or imaginary inconveniences; whereas the exercise of riding is in no degree fatiguing, and therefore must be infinitely more beneficial." (Vol. ii. §§ 31 and 33.)

Having occupied some days in steadily rousing the hepatic and intestinal secretions, and in clearing the bowels of their unhealthy contents, we may commence the use of tonics, and at once put her upon a course of steel medicine.

Two grains of ferri sulph. and two or three of quinine, with some extract of gentian, or hop, may be given twice or three times daily. The morning laxative should consist of the same dose of steel medicine, with from one to two drachms of magnesiæ sulph., in the following form:—

R.—Ferri sulphatis . . .	gr. xvj;
Magnesiæ sulph. . .	3j;
Acidi sulph., dil. . .	3j;
Syrupi rhæados . . .	ss;
Aqua menthæ pip. . .	3vijss.

M. Fiat mistura, cujus sumat cochl. magn. ij, primo mane.

Twice a week she should repeat the blue pill, and thus keep up a steady action upon the liver and bowels; or, if the stomach be irritable, the citrate of iron, or of iron and quinine in an effervescing form, will prove an agreeable and refreshing drink, by means of which the patient will be able to take a considerable quantity of steel medicine. Under a course of treatment of this character, the health usually improves, the vigor of the system returns to its natural standard, digestion and assimilation proceed with due activity, fresh and healthy blood is formed, the various symptoms which have been enumerated disappear, while those of health return, and with them we may expect the appearance of the menses. This will, however, depend upon how far the health and strength have been established; and it must be borne in mind that, although the chylopoietic functions have been restored to a natural action, and the patient has in great measure regained her health, she may nevertheless not have attained a sufficient amount of strength to furnish this periodic effort and loss. It is desirable, therefore, to persevere in the above plan for some time; for it will be self-evident, that where the powers of the system have been so depressed as to justify the term chlorosis, some months must probably elapse before it can have acquired

sufficient strength to establish this secretion. It is the more necessary to bear this fact in mind, for an error is frequently committed in supposing that, the health being now restored, the absence of the catamenia must be the result of uterine torpor, and means to remedy this are put in force, when a little patience and perseverance in the above-mentioned plan of treatment would, in all probability, have entirely succeeded.

Generally speaking, it is now desirable that the patient should have change of air. A short residence in a mountainous district, or at the sea-shore, will frequently be of great service, and if the season of the year permit, a course of sea-bathing will be highly desirable. At any rate, she can bear the warm or tepid sea-water bath twice a week, and sponge herself thoroughly with sea-water (cold or tepid) every morning.

If, however, the catamenia do not appear after an apparently perfect restoration to health, it will be necessary to make a trial of those remedies which are considered to exert a specific effect on the uterine system.

A great variety of most discrepant remedies have been brought under the term *Emmenagogue*, a large proportion of which have either no action on the uterus at all, or only act upon it indirectly by their effects on other and neighboring organs. Thus, of the purgatives which have long enjoyed a reputation as emmenagogues, a considerable number act only by thoroughly clearing out the bowels, and thus restoring greater activity to the abdominal circulation; whereas others, as aloes, from acting chiefly on the lower bowels, and producing more or less disposition to hemorrhoidal congestion, indirectly rouse the uterus itself. Stimulant purgatives of this character, or even pure diffusible stimuli, have been used for this purpose as enemata into the rectum with good effect. Thus, ten grains of powdered aloes, suspended in mucilage and a small quantity of water, so as to be retained in the bowel more easily, has been found by Prof. Schönlein, of Berlin, to have a powerful effect in exciting uterine action and bringing on the menstrual secretion. And ten drops of liquor ammoniæ in a little warm milk, has

been also used by Dr. Locock, for the same purpose, with equal success. Local stimulants applied to the breasts (as sinapisms, &c.) are known to act powerfully on the uterus through their sympathy with this organ, and induce the catamenia when other means had failed.

The various preparations of iron promote the menstrual secretion solely by acting as tonics, and by restoring the healthy condition of the circulation. Combined with laxatives, they also increase the contractile tone of the intestinal canal, diminish its calibre, and thereby the bulk which it occupies in the abdominal cavity; pressure is taken off the abdominal circulation, and the supply of blood to the uterus is rendered more active and free.

The emmenagogue action of cantharides is more doubtful; it is well known to exert a powerfully stimulant effect upon the bladder, and is thus capable of acting indirectly on the uterus. But the observations of the late Dr. Dewees, of Philadelphia, as to its effect in leucorrhœa, render it not improbable that it is also capable of acting directly upon the uterus.

The savine is a violent stimulant, and has a powerful effect in exciting hemorrhagic action; and certainly in cases where it has been given with a criminal intent to excite abortion, it appears to have acted directly on the uterus, and to be strictly an emmenagogue.

The two most valuable emmenagogues which we possess, and which exert a specific action upon the uterus, are the preparations of iodine, and the *secale cornutum*. The iodide of iron is perhaps the best form for administering iodine to obtain its emmenagogue effects, and may be given in the form of pill or syrup two or three times daily. The *secale cornutum* is best given in the fresh powder, suspended in water with a little mucilage. But I would again earnestly impress on the minds of my readers, that medicines of this sort are *very rarely* needed in the treatment of amenorrhœa; the case either requiring a little more patience and perseverance in the treatment previously recommended, or depending on other conditions, shortly to be considered, and which are less under our control.

We every now and then meet with cases where the health, although good, is feeble; the patient is well grown and fully formed, and yet the powers of the system so feeble and torpid (especially of the circulation), that menstruation is not established until several years later than the ordinary period, and then in a scanty, imperfect manner. In some it occurs chiefly in the summer months, and is absent during the winter, as is seen among the females of the arctic regions; it also generally ceases some years before the usual time. The case is evidently one of deficient power, and the use of emmenagogues, either to induce or maintain the periodical discharge, would here be injurious, as it would only be stimulating the system to make efforts for which it is unfitted.¹

The next form of amenorrhœa—viz., where it depends on “congenital defect of the organs on which this function essentially depends”—is fortunately of rare occurrence, for it admits of little or no treatment. Instead of the form becoming more rounded, the breasts more prominent, the figure assumes a gaunt and masculine character; the growth is unusually vigorous, the frame muscular, the shoulders broad and square, the hands and feet large and long, the features coarse. A quantity of hair sometimes covers the upper lip, and occasionally there is a complete beard, as in the male. The mammæ are small and defective. If the patient has passed the ordinary age of puberty without any appearance of the catamenia, and without any of those symptoms which have been called the *Molimina Menstruationis*, and which indicate an effort of the system to establish the discharge—if, also, she suffers from no inconvenience from this state of amenorrhœa, the case probably depends upon a defective condition, or entire absence, of the ovaries and uterus. The masculine expression and figure vary considerably in these cases; in some they are scarcely perceptible, in others they exist to a very marked degree. In some the breasts are fairly developed, and perhaps slight menstrual efforts have been occasionally manifested, but they have

¹ See case of Mrs. S., *Med. Times*, July 5, 1851.

given her little or no inconvenience, and have disappeared again; whereas, in others, the mammary glands are scarcely developed at all.

The usual characters of this defective state, as far as can be ascertained by examination during life, are that we find a small, narrow vagina, much shorter than usual, and generally without any trace of os uteri, or a mere thickening where it ought to have been, and no traces of a uterus beyond. There are, of course, many other modifications of these congenital defects, but they properly belong to the next species of amenorrhœa. I will only observe, in concluding this subject, the rather remarkable fact that, in the majority of these cases which have come under my notice, the patients were married.

The third species of amenorrhœa in the arrangement which I have adopted, is where the catamenia have been naturally secreted, but retained within the uterus or vagina, from some obstruction of these parts.

The usual changes indicative of puberty have made their appearance in the ordinary way, and have been followed by those periods of discomfort or actual pain about the pelvis back, and loins, with headaches and more or less disorder of the general health which show that the discharge might be expected. With each returning period, these symptoms become more severe, and others are now added, arising from local distension and pressure.

If the vagina be closed at its outer extremity, whether by adhesion of its walls or by an imperforate hymen, the catamenia, being prevented escaping, accumulate in the uterus and upper part of the vagina; the pain of the back becomes more severe, and returns in paroxysms, probably from the distended uterus being excited to contractions; she suffers from bearing down, tension, and a sense of weight in the pelvis; the abdomen swells; there is frequent desire to empty the bladder, and difficulty in doing it, from the pressure of the distended vagina, and this sometimes amounts to complete retention of urine; the feces are also passed with difficulty, from the obstruc-

tion caused by the distended uterus pressing upon the rectum.

"These symptoms, at first, appear every four weeks, continue some days, and then disappear, probably from the menstrual fluid, which had been effused into the vagina, being again absorbed. At last, however, it accumulates there, and now they become constant, experiencing exacerbations; and by degrees general disturbance of the health follows. The spirits are affected, the face becomes pale, the abdomen swells and is painful, she complains of vertigo and sleepless nights, and has a frequent inclination to bear down, as in labor. Examination per vaginam quickly detects the cause of these symptoms. If the membrane be not very thick and firm, it becomes so distended and protruded by the accumulation of menstrual fluid behind, that it appears between the labia like a pouch filled with blood."

"Where the necessary examination has been neglected, this condition may be easily mistaken. From the patient being of an age at which the menses ought to have made their appearance, and from the symptoms coming on or increasing every four weeks, a practitioner is easily induced to suppose that they are produced by a state of general debility, and prescribes a variety of means for bringing on the discharge, which not only fail to relieve the symptoms, but aggravate them, and may induce a state of actual danger." (Richter, *Anfangsgründe der Wunderrzneykunst*, § 408, &c.)

The operation is simple, and usually performed without difficulty; a quantity of black tar-like fluid comes away, to the great relief of the patient. Care must be taken to prevent reunion of the parts, by inserting a roll of lint dipped in oil, after the collected fluid has been thoroughly removed by injection of warm water, or by a sponge tent.

The investigation of imperforate vagina and uterus is one of great interest, but the consideration of it only belongs to the present subject as a cause of amenorrhœa; for further details, I must refer to the well-known work

on surgery above quoted, which contains by far the fullest and best information upon it.

The most common form of imperforate vagina which can act as a cause of amenorrhœa is, where the labia and nymphæ are adherent together, or where the parietes of the canal are united, either partially or throughout their whole extent; the first is rarely a congenital defect, whereas the last is in all probability occasionally so. The adhesion of the nymphæ and labia has usually been induced in early infancy from want of cleanliness, neglected excoriations, &c.; and these adhesions, or union of the parts, may, under favorable circumstances, extend up the vagina to a considerable distance. Whether or not this cohesion of the walls of the vagina can take place throughout their whole extent after birth, or is purely a congenital defect, is a question not easily answered, nor is it one of any practical importance; certain it is, that we every now and then meet with cases where this cohesion of the vaginal walls can be safely separated, either by the finger or by sponge tents, showing that the canal (*per se*) was perfect. In some of these cases, the uterus, when distended by the accumulated menstrual fluid, has made powerful efforts to expel it; the adhesions have gradually yielded, and relief at length has been obtained, after severe and prolonged sufferings, which probably have been mistaken for those of dysmenorrhœa. In others, the violent contractions of the uterus have been attended with fatal results; the retained fluid has distended the Fallopian tubes and passed into the abdominal cavity—for cases of which I must again refer to Richter's admirable chapter on this subject. A more common result is, that if it be scantily secreted, from general debility, it is again absorbed, and the system adapts itself more or less to the defect, the patient suffering from intense periodical headaches, epileptic attacks, &c.; or nature relieves herself by establishing a vicarious discharge from other parts—the nature of which I shall consider under the next and last form of amenorrhœa.

In most of the above-mentioned cases, where the walls of the vagina are coherent, there is a slight depression

between the labia, and if the point of the finger be firmly pressed against the deepest part of it, in the direction of the lower aperture of the pelvis, and gently rotated with a boring motion, the parts usually begin to yield and separate, and this may be followed up by the same process, aided or not by sponge tents as the case may be. In the first instance, where the external depression is very slight, I have found it necessary to fix a little ball of compressed sponge tightly against the part by means of a T bandage, and thus effect the first separation of the vaginal walls. A bougie of the proper form and size will require to be worn in the passage for a little while after, as it is otherwise impossible to prevent the contraction and even obliteration of the canal from cicatrization and reunion.

The vagina is sometimes only a blind sac, which passes up a little way and then terminates; at others, it goes up nearly to the uterus, but does not communicate with it.

It should be borne in mind, however, that these congenital defects of the vagina seldom occur to a very hopeless degree, without the uterus itself being more or less defective, so that the catamenial function is never established, the case belonging rather to the congenital form of amenorrhoea which I have previously considered.

Cases, however, have occurred where the vagina appears entirely absent, and where the uterus has become enormously distended with menstrual fluid, producing much suffering and danger, and where an incision has been required to be carried to a very considerable depth before the uterus could be reached. The following case, quoted by Richter from the ninth volume of Dr. Duncan's *Commentaries*, is an excellent illustration of the effects produced by these accumulations from obstructed menses, and of the means adopted to remove them; although, at the same time, I cannot help thinking that with patience and a firm pressure in the right direction, the adherent walls of the obliterated vagina might have been separated, as I myself have found in at least three instances. "A young woman of twenty had a hard abnormal tumor of the abdomen below the umbilicus, and

another smaller one of about the size of a hen's egg at the left side, and, moreover, an abnormal configuration of the external parts of generation. Instead of a vagina there was a blind passage, about half an inch long, admitting the tip of the finger; the extremity of this passage was completely closed, and felt hard and firm. She complained of pressure and weight in the region of the pelvis and loins, with pain in the hips, want of appetite, shortness of breath, quick pulse, constipated bowels, frequent desire to pass water, which only came in drops, with much pain. These symptoms at times diminished, at others they increased. The two abdominal tumors, which were evidently seated in the uterus and ovary, swelled with every attack of pain, and their increase of size was in proportion to the severity of the symptoms. As the former appeared to be the uterus distended by a quantity of retained catamenia, a lancet was plunged into the fundus of the above-mentioned blind passage; and after having penetrated to the depth of two inches, the catamenia made their appearance. The discharge was thick and without smell. When about 4 lbs. had been evacuated, it stopped; the abdominal tumors had considerably diminished, but not entirely disappeared. As the patient, the day after the operation, was attacked with pain in the back, and swelling of the abdomen, an emetic was ordered; this brought on a copious discharge of bloody fluid, which was followed by an immediate disappearance of all her symptoms, as well as of the abdominal swellings."

I merely allude to those cases of obstructed vagina which have resulted from the sloughing and cicatrization after a severe labor, as they seldom occur to such an extent as to obstruct the discharge of the catamenia, although they present most serious obstacles to parturition, to the subject of which they more properly belong.

The most common form of imperforate os uteri is where the edges have adhered together—a condition which is more frequently seen in connection with pregnancy; or this also may have been the result of sloughing and cicatrization, produced by severe labor; in

other cases it occurs as a congenital defect. In others the os uteri is covered by a preternatural membrane, or is entirely wanting. In this latter form, it may be questioned how far they have not been in reality cases of adherent edges of the os, but where the union has been so close that the os uteri could not be detected.

"In cases of this sort, where the catamenia are secreted into the vagina instead of into the cavity of the uterus, no injurious consequences will result, beyond that the patient remains barren; but where the catamenia are secreted in the usual way by the uterus, the discharge accumulates in and distends it. Upon examination per vaginam the uterus will not only be found distended, but sunk low into the vagina; the fundus may be felt above the symphysis pubis; and upon laying one hand upon the abdomen, and passing a finger of the other into the vagina, we shall be able to raise or depress it at pleasure. The case may terminate in one of two ways. Either the menstrual blood is absorbed, or it finds a passage through the Fallopian tubes into the abdominal cavity. As soon as this takes place, the local symptoms arising from uterine distension disappear; the abdomen swells and becomes painful, the breath becomes fetid, fever and death follow." (Richter, § 424.) If the obstruction result from adhesion of the lips of the os uteri, the distension and contractions of the uterus are sometimes sufficient to make them give way, and thus effect a cure.

"We have reason to suspect that the os uteri is closed, if the patient is at an age when the catamenia ought to have appeared and have not; where the uterus is enlarged, and where the above-mentioned train of symptoms appear without the existence of any obstruction in the vagina. The state of the os uteri externum will be ascertained by the finger, of the os uteri internum by a sound."

"An operation is the only means of affording the patient any relief. If the uterus be distended with blood, it sinks as low into the vagina as in pregnancy—so that it can be easily reached and punctured. But when the menstrual fluid has already escaped through the Fallopian tubes into the abdominal cavity, and consequently the

uterus, being no longer distended, is now high in the pelvis, the operation will be attended with serious difficulties, and is in all probability too late. If the uterus be distended, the cervix shortened, the os uteri merely closed by a membrane, the operation may be performed with perfect ease and safety." (Richter, §§ 425-6.)

The variety of these congenital malformations is considerable: in many they do not obstruct the flow of the catamenia at all; in others the discharge is only effected with great suffering and disturbance of the general health—the fluid being ultimately forced through some minute orifice which eludes the search of the medical man. A remarkable case of congenital defect of this sort occurred some years ago at St. Bartholomew's Hospital. The patient was a fine-grown young woman, of about seventeen; she had arrived at puberty, but the catamenia had not appeared, and she suffered periodical attacks of severe pain about the pelvis, and excruciating headaches at monthly intervals. The lower part of the posterior wall of the bladder was defective, and opened into the vagina. A hard globular mass could be felt in the direction of the uterus, and at one spot a slight depression or groove, marked the probable situation of the os uteri. A trocar was passed at this spot, and penetrated the uterine cavity, discharging a large quantity of the thick tar-like blood before described.

The last form of amenorrhœa which I have to notice is "*suppression*" of the menses; viz., where menstruation has been naturally established, but where, from some cause, it has been again suppressed. This may occur either as an acute or chronic affection.

The acute suppression is produced by very violent impressions on the system during a menstrual period, by which the discharge is suddenly checked—such as exposure to cold and wet, a sharp attack of fever, violent affections of the mind, and the derangement caused by a meal of indigestible food. The patient is seized with violent pain of the pelvis and loins, sometimes extending over the whole abdomen, and assuming more or less of an inflammatory character. The pulse is quick and

throbbing, the face is flushed, the skin hot and dry, and there is usually intense headache. In slight cases, a smart dose of calomel and James's powder, putting the feet and legs into hot water, taking some diaphoretic drinks, and getting into a well-warmed bed, will usually restore the suppressed discharge in the course of a few hours. If, however, the attack be very severe, and the febrile and inflammatory symptoms more violent, a large mustard poultice should be applied on the lower part of the abdomen, close above the symphysis pubis; the legs and thighs should be wrapped in flannels wrung out of a hot infusion of mustard, and, if necessary, leeches applied to the vulva. Antimonial diaphoretics should be given to produce perspiration, and, when once this has been established, a full dose of Dover's powder will give great relief. If the attack has evidently arisen from gastric derangement, a brisk emetic will not only remove the cause, but, by the general excitement which it produces in the system, and by its diaphoretic action, frequently at once succeed in restoring the lost secretion. Venesection has been recommended when the febrile action runs high; but, although it will, without doubt, produce speedy and decided relief, I object to its use in these cases, as, by so entirely relieving the uterine system of the necessity of making any further effort, it tends to perpetuate the suppression, and make it assume the chronic form.

In those cases where menstruation has been established but again suspended or suppressed by impaired health and broken powers of constitution, the patient's condition is similar to the first form of amenorrhœa which I have described; viz., where menstruation is retarded by the feeble state of the system not being equal to establish this function, and, as such, requires a similar course of treatment.

In the case of suppression of the menses, especially where it is connected with general debility, nature, failing in the effort to restore the lost secretion, frequently makes a periodic attempt to relieve the system through some other outlet. This substitute for the proper uterine

secretion has been called *vicarious menstruation*. It more commonly appears as a bloody discharge from one of the great mucous surfaces, viz., either of the lungs or some part of the alimentary canal; but it has also been observed to be secreted from the eyes, ears, nostrils, gums, and œsophagus, from the bladder, breasts, and skin; and is well known to fix itself on some part where more or less of a drain is going on, as in a chronic ulcer. At the monthly period, the part becomes extremely vascular, and the congested vessels are relieved by a copious discharge of bloody fluid (see case of Mrs. G., *Med. Times*, Oct. 12, 1844). No peculiar rules of treatment can be given for these cases; the grand object is to restore the right secretion, and suppress the wrong; and we must be guided by the particular circumstances of each case.

CHAPTER II.

DYSMENORRHOEA.

THE term of *Dysmenorrhœa* has been applied to every species of painful menstruation, whatever may be the cause or peculiarity of the case. It therefore includes a great variety of derangements, differing very much in character, arising from very different causes, and requiring very different treatment, but possessing one great feature in common, viz., the severe suffering with which the menstrual function is performed.

The varieties which menstruation presents, even within the limits of health, are endless; the regularity of the periods, both as to the interval between them, and the duration of the attack, the quantity and quality of the secretion, and the amount of pain with which it is attended, present numberless modifications. It will, therefore, be evident that the same must obtain when these various modifications have passed beyond the limits

of healthy action, or, in other words, when the function is morbidly deranged. Hence we see that many disorders of the system will so far derange the menstrual function that it shall be preceded or accompanied by severe suffering; but the very pain which the patient endures, varies greatly both in its locality and characters, chiefly depending on the organ which is most affected. Hence, also, we frequently observe in dysmenorrhœa, that cause and effect act and react upon each other, increasing the severity of the disease, and rendering the diagnosis more obscure and the treatment more difficult.

Dysmenorrhœa neither necessitates any peculiar length or shortness of the menstrual attacks, or of the intervals between them. The catamenial discharge may be sparing or profuse, dark, florid, or discolored, thick or watery, with or without coagula or exudations of fibrinous matter. In describing, therefore, the symptoms of the complaint, the reader must be prepared to find a degree of vagueness, owing to their great variety and the numerous modifications which they present, depending partly on the peculiar course of the attack, and partly on the habit, &c., of the patient herself.

The pain is chiefly of two kinds, referable either to the uterus or ovary. In the first, the pains are chiefly in the back and loins, extending more or less round the pelvis, and sometimes in front, but of a spasmodic character, coming and going in paroxysms of intense suffering, nearly identical with those of a severe abortion; the uterus being in a morbidly sensitive or irritable state, and, therefore, the slightest contraction producing great suffering; or roused to violent efforts to force out the menstrual fluid which has been secreted into its cavity, if any obstruction to its expulsion exists. Or the pain may arise from violent congestion, or an inflammatory condition of the ovary, producing the most agonizing pain which can be imagined. Always severe, it is sometimes so intense as almost to deprive the patient of self-control and consciousness, making her writhe, and even roll about upon the bed or floor, from the extremity of her agony, and sometimes attended with insensibility and convulsive

action, like epilepsy. In other cases, it seems to depend on an highly irritable and inflamed condition of the os and cervix uteri; the peculiar lancinating pains, and pain in the crest of the os ilii, forming the more prominent part of her sufferings. In other cases, it is attended with much hemorrhoidal congestion and pain about the rectum.

The pain usually precedes the discharge, and rises to its acme just before the discharge appears. When this has taken place, the congestion diminishes, the pain abates, and perhaps disappears before the discharge has ceased. This, on the whole, is the most common mode of its appearance. In many cases, however, the discharge appears first; and having lasted for a short time, it stops suddenly, or diminishes considerably, and is then followed by an attack of pain which continues until the discharge returns, and sometimes by its profuseness has considerably reduced the powers of the patient. Under these circumstances, it will assume a menorrhagic character, and be accompanied with coagula.

In other cases the discharge is scanty throughout. After much suffering, a quantity of fibrinous exudation is expelled in shreds from time to time, and this is attended with relief; or a return of the pain indicates a fresh formation of exudation and fresh excitement of uterine efforts to expel it. The quantity varies exceedingly. Sometimes a few shreds are detected in it, and no more; in others they continue to be expelled for many hours, amounting in the end to a considerable quantity; or one or two larger portions are discharged, forming even a cast of the uterine cavity. The quantity of fibrinous matter thus thrown off is usually in the inverse ratio to the pain; the smaller the quantity of exudation discharged the greater the pain, the more profuse the greater the relief.

There is also another variety, less frequently observed, viz., where the pain does not appear until the discharge is beginning to cease, probably from the circumstance of the irritable uterine system not having been sufficiently relieved.

The duration of the pain, especially in its more ordi-

nary mode of attack, viz., where it precedes the discharge, is very various. In some cases it may only last a few hours, whereas in others it may continue some days.

Dysmenorrhœa may be classed under two heads, *functional* and *mechanical*; the former arising from, or connected with, some derangement of the general health, affecting the healthy condition of the uterus and ovaries, —the latter depending upon some mechanical obstruction to the evacuation of the catamenial discharge from the uterus, resulting either from a contracted or closed state of the os uteri or from the doubling of the uterus upon itself in certain cases of retroversion.

Perhaps the simplest form of functional dysmenorrhœa is that which is induced merely by derangement of the digestive organs; the uterus partaking of the nervous irritability which exists under these circumstances, and showing a disposition to act in the same irregular, spasmodic and painful manner in which it is known to do from the same cause at the commencement of labor. It is the more disposed to cause an unusual amount of suffering at the menstrual periods, as more or less hemorrhoidal fulness invariably accompanies chylopoietic derangement, and tends to increase the congestion and irritability of the organ which are natural to it at these times.

If the patient has a constitutional tendency to rheumatism or rheumatic gout, or circumstances have combined to give it that direction, this diathesis or taint in the system will, in all probability, be attended with dysmenorrhœal suffering, the increased congestion and irritability of the uterus at the menstrual periods strongly tending to localize it here. We shall generally be led to suspect the presence of this condition by the rheumatic pains in one or more of the larger joints, the stiffness and swelling in some of the smaller ones, the disposition to frequent flushing, the high-colored and loaded state of the urine, and the occasional appearance of uterine flatulence.

Closely allied to the rheumatic gouty diathesis is the disposition to a variety of neuralgic affections which we

so frequently see associated with it. In certain forms of dysmenorrhœa the pain is observed to assume a very decided neuralgic character. The uterus is in a state of extreme irritability, and paroxysms of severe suffering are excited by the most trifling causes. At times it would seem as if the mere congestion connected with the menstrual period were sufficient to bring on the pain; at others the pain seems to be excited by the presence of the secreted menses in the cavity of the uterus, and to a still greater degree if accumulated there from any obstruction to the discharge, whether from the formation of coagula, or from a contracted state of the os or cervix uteri. This neuralgic form of dysmenorrhœa is also frequently connected with an hysterical habit of the body.

The irritable state in which the uterus commonly remains for some time after abortion, is frequently a cause of dysmenorrhœa, more especially if aggravated by the presence of one of the other causes already mentioned—the recurrence of these attacks readily inducing a transition from a state of irritation to one of an inflammatory character, if the general derangement has not been sufficiently attended to, or the local affection aggravated by constipation, excessive exercise, and similar causes.

I need hardly add that an inflammatory condition of the uterus, whether of the whole organ, or partially, as regards the os and cervix, will also give rise to painful menstruation.

The pain in dysmenorrhœa is not always seated in the uterus: occasionally the ovary is the chief seat of the patient's suffering. The organ becomes highly congested or actually inflamed; it swells considerably, and becomes intensely sensitive. The pain is of the most agonizing character, and is frequently attended with severe nausea, or obstinate and most distressing vomiting. The patient describes it as being different to any other pain she ever experienced, and dreads a return of the attack;—its peculiarly unbearable sickening character apparently resembling the sufferings from orchitis, or from any injury to the testicle in the male. This is decidedly the severest form of dysmenorrhœa, and, moreover, is remark-

able for another peculiarity, viz., the formation and discharge of fibrinous exudations from the uterus. I have carefully attended to the connection of this appearance with ovarian irritation, for many years, and stated my conviction of this fact more than ten years ago, in my "Observations on the Dysmenorrhœa and other Uterine Affections in connection with Derangement of the Assimilating Functions;" and further experience has amply confirmed this view as regards the ovary, though less so as regards the kidney, than I at one time supposed.

Under no circumstances does the condition of the ovary so closely resemble that in which it is shortly after impregnation, as during the presence of a menstrual period. The turgid, swollen condition of the whole organ, the high vascularity of its stroma, the enlargement and rupture of a Graafian capsule, and discharge of the contained ovum render these two conditions, to a certain extent, nearly identical—the one, however, is the commencement of a process of some duration; the other, in a state of health, is the brief manifestation of a periodic function. But if, by any cause, the ovarian excitement at the menstrual period be aggravated or prolonged by an irritable or otherwise morbid condition of the organ, a still further approximation will be made to the state of the ovary during, or shortly after, impregnation; and the lining membrane of the uterus begins to undergo (in an imperfect manner) some of those remarkable changes which are known to take place at the commencement of pregnancy, as regards the formation of the decidua; and this view is further confirmed by the well-known fact in extra-uterine pregnancy, where an imperfect decidua is formed, although the ovum does not occupy the cavity of the uterus.

"Dysmenorrhœal exudations" (says Prof. Virchow), "are in reality the whole surface of the uterine mucous membrane; in which we may distinguish the glandular orifices, and sometimes very large vessels, even with the naked eye. I have repeatedly observed this condition in the dead body, where the loose and very vascular membrane was still partially attached to the uterine

surface. We are therefore justified in calling this membrane the *Decidua menstrualis*." (*Verhandlungen*, Part 2.)

I have already stated, that the exudations in ovarian dysmenorrhoea vary exceedingly, from one or two small ragged threads to large pieces of membrane—sometimes being a whole cast of the uterine cavity; sometimes they have a stringy appearance; generally, however, they are much broken up, and their discharge brings great relief. After a time, fresh paroxysms of pain return, which, after a while, are again relieved by another expulsion of these membranous pieces, until the whole formation has come away. In these cases, the pain will frequently vary a good deal, both in its character and locality, at different stages of the attack. Before the discharge has come on, it is in one or other ovarian region, mostly the left; it is of that peculiar sickening, unbearable character which is so characteristic of ovarian suffering; it extends down the thigh of that side, and usually also backwards to the corresponding sacro-iliac synchondrosis; in which case it is greatly aggravated by the passage of scybala down the sigmoid flexure of the colon. The groin, or rather the ovarian region, is slightly swollen and acutely tender to the touch: pressure not only occasions severe suffering in the part, but great pain at the sacro-iliac synchondrosis of the same side. In this state of high ovarian excitement, the uterus is probably much more engorged than is usual at a menstrual period, and yet, from the condition of its lining membrane, less able to relieve itself. It is therefore stimulated to contraction, and these contractions are of the most painful character—as must always be the case where the uterus is not much distended, and has no firm mass within its cavity to contract upon. The sufferings, then, during the second stage of an attack of ovarian dysmenorrhoea, are chiefly, if not entirely, uterine. The pain is exactly (as far as can be judged by the patient's expression and description) like severe after-pains, or as is occasionally seen during an early abortion. After-pains of this unusual severity (where no inflammation is present) are not produced by large coagula within its cavity, but are caused either by portions of decidua still

adhering, or by the presence of those slender coagula which occasionally form in the uterine sinuses, from imperfect contraction of the organ after labor, and which can only be expelled by repeated and very painful efforts;—some of the slender vermiform portions of the exudations in ovarian dysmenorrhœa, are probably formed in this manner. I have reason to believe, in the more common form of dysmenorrhœa (independent of ovarian irritation), where the discharge consists almost entirely of small and much-broken black coagula, that this appearance is due to a similar cause.

Ovarian dysmenorrhœa is not necessarily a primary affection; as most, if not all, of the other forms may pass into or excite it. The periodic uterine excitement of a menstrual period can rarely continue long to an unnaturally painful extent without producing ovarian irritation; and this holds good equally with the mechanical as well as the functional forms of dysmenorrhœa; so that it is, on the whole, more common to see ovarian dysmenorrhœa complicated with some other species, than occurring as a primary affection by itself. I may also add, that a slight amount of ovarian irritation, although it will be accompanied by ovarian pain at the menstrual period, may not be of sufficient duration to produce the uterine exudations: hence, although we may have ovarian pain without exudations, we cannot have exudations without ovarian pain.

The presence of clots in the menstrual fluid does not necessitate an unusual amount of pain at these periods, because it is frequently seen in passive menorrhagia, where the os uteri is so flabby and relaxed that it yields without pain, and allows the clot to escape. Large clots merely show the fact that the blood has accumulated in the uterine cavity, and coagulated there; its free discharge having been obstructed by a small clot blocking up the os uteri, or by this opening being either originally too small, or rendered so by the swelling of the part. The uterus, becoming distended, contracts upon the retained coagulum, and the expulsion or discharge is effected with more or less pain.

From the above observations it will be seen that functional dysmenorrhœa may occur under at least five different heads, viz:—

1st. Dysmenorrhœa connected with derangement of the digestive organs.

2d. Occurring in a gouty or rheumatic habit of body.

3d. Dysmenorrhœa of an hysterical or neuralgic character.

4th. In connection with some inflammatory action of the uterus—usually the os and cervix.

5th. Arising from ovarian irritation.

In each of these forms it will present certain modifications or peculiarities, which are valuable guides for adapting our treatment to the particular case, and without which we cannot hope for success.

In the first species of dysmenorrhœa—the simplest, and the one most commonly met with—the indications for treatment are merely to rectify the derangement of the digestive organs, improve the tone and strength of the system, and, if necessary, to allay the pain at the periods by sedatives. It is of the greatest importance to obviate as soon as possible the constipated state of the bowels, and the torpid condition of the liver; for more or less of hemorrhoidal congestion is almost invariably the result—which greatly adds to the severity of the attacks and the difficulty of stopping them. Strong and coarse purgatives do harm, because they not only leave the bowels constipated when their immediate effect is over, but, by the violence of their action, increase the hemorrhoidal tendency, and thereby rather aggravate than allay the severity of the attacks. A mild dose of blue or Plummer's pill, guarded by an equal quantity of extract of hop or henbane, and carried off the next morning by rhubarb and magnesia, or any other gentle laxative, will act effectually, and yet not irritate. For daily use (until the constipated habit be overcome) we know of no laxative like the combination of ferri and magnesia sulph.: it may be taken for a greater length of time, and with better effect in giving a healthy tone to the intestinal canal than is the case with any other laxative; nor have we found

that steel, thus combined with a laxative, exerts any unfavorable influence on the uterine system. During the intervals between the periods, the state of the digestive organs may be still further improved by the use of mineral acids and tonics; and just before an expected attack, we should insure a little extra action of the liver and bowels, in order to remove every source of irritation as far as possible. If, however, the pain be not relieved by this treatment, a suppository of pil. saponis c. opio, gr. v, may be passed into the rectum with good effect. But opiates are not to be had recourse to on every occasion—they are useful adjuncts, but certainly ought not to form a prominent part of the treatment. In the simple form of dysmenorrhœa connected with gastric derangement, they are especially undesirable, as tending still further to derange the stomach and constipate the bowels. If a sedative be necessary, I should much prefer the combination of camphor with the extracts of hop and lettuce, which I recommended several years ago.

The interval between the periods should be still further turned to account in the improvement of the general health by early hours, regular and active exercise, &c. &c., as already detailed in the treatment of amenorrhœa.

The connection of dysmenorrhœa with a rheumatic-gouty habit of the system, has been pointed out many years ago by Dr. Locock, by the late Dr. Gooch, and also by Dr. Dewees, of Philadelphia, in the use of guaiacum in certain forms of this affection which had resisted other means of treatment. The disposition to flatulence and hemorrhoidal congestion, the frequent flushings and migratory pains in different parts of the body—more especially the joints, and the loaded condition of the urine, from excess of urea, lithic acid and lithate of ammonia, are diagnostic of this condition.

The treatment just described in the previous form, arising from derangement of the chylopoietic functions, will be a necessary preliminary in the present case; the more so as this rheumatic-gouty state of the system seldom exists without hepatic and gastro-intestinal derangement of some considerable standing; and also because it is well

known that increased activity of the liver greatly assists the kidneys in ridding the system of those morbid principles on which this condition chiefly, if not essentially, depends. A few days, therefore, at first will be advantageously devoted to a mild course of alterative and laxative medicine; five grains of pil. hydrarg., with a similar quantity of extr. hyoscyami may be given every other night for a few doses. The sodæ pot.-tart., or Rochelle salt, is an excellent laxative in these cases; it lessens the acid character of the urine, and when combined with manna and rhubarb, speedily removes the intestinal flatulence which is frequently so troublesome. The state of the urine will be still further improved by a mixture of bicarbonate and nitrate of potass., taken twice or three times a day, after meals.¹ If the pulse be of sufficient strength to justify its use, the vinum colchici may be added to this saline medicine with advantage; it certainly promotes the excretion of the lithic acid, and frequently rouses the liver to considerable activity, with great relief to the system. More frequently, however, the atonic state of the system, and feeble circulation, do not justify the use of this remedy, but rather indicate the guaiacum instead. The bowels may be regulated by a powder of pulv. guaiaci and magnesia, āā gr. x, taken in water every morning; to which a little sp. ammoniæ arom. may be added, and, if necessary, the tinct. guaiaci ammoniata may be given during the day, or at night, in some milk.

We usually infer the connection of dysmenorrhœa with an hysterical habit of body, by the appearance and history of the patient herself; by the evident co-existence of hysteria in some other form; by the suffering at the periods being out of all proportion to the apparent cause; and by the absence of those other causes of dysmenorrhœa which I have enumerated. It will be necessary to pay strict attention to the state of the digestive organs in these cases—to regulate the secretions, and restore tone

¹ R.—Potassæ bicarb. gr. x; potassæ nitratis gr. v; sp. ammon. arom. ʒss; aquæ menth. pip. ʒj.—M. Fiat haustus.

and strength; for it is well known how valuable this sort of treatment is in most, if not all, cases of an hysteric character, before resorting to sedatives and the more immediate class of antispasmodic medicines. The early treatment, therefore, which I have described in the two preceding forms, will be indicated here, and not unfrequently of itself goes a long way towards relieving the suffering at the catamenial periods. It is in this form of dysmenorrhœa where we may have recourse to sedatives with more confidence than in any other, provided the necessary attention has been first paid to the state of the digestive organs.

During the period, we may give opiates pretty freely with much relief; but generally it may be taken as a rule that the more they can be used in the form of local remedies, the greater and more immediate will be their effect in allaying the pain, and the less will be the derangement of the digestive organs; and for this purpose the *pil. saponis c. opio*, to which I have already alluded, is one of the best forms of opiate suppository which can be used. Camphor has long and deservedly held a high repute for allaying the pain in this affection. Equal parts of camphor and *extr. hyoscyami*, or the combination of camphor, *extr. lactucæ*, and *extr. hyoscyami* may be given; and frequently repeated, with the best effects; or, if a fluid form be preferred, the *spir. camphoræ* with *tinct. hyoscyami*, or five gr. of camphor with a few drops of spirit, so as to pulverize it, and suspended with a little *mist. acaciæ*. Dr. Dewees has also used it combined with opium, in the form of an enema, where the irritability of the stomach did not allow it to be taken by the mouth.

Besides these means, a variety of local remedies have been resorted to, in the form of hot semicupia—hot flannels wrung out of hot water or out of hot decoction of poppies or mustard, and applied round the pelvis and to the loins—sinapisms to the sacrum, belladonna plasters, and the *linim. camphoræ comp.* with *tinct. opii* (3iiss and 3ss), so as to redden the skin short of producing an actual blister.

During the intervals between the periods great attention should be paid to insuring a healthy state of the bowels, an occasional dose of pil. hydrarg., or pil. hydrarg. chloridi comp., combined with extr. hyoscyami, should be given, and a mild laxative the following morning, according to the circumstances of the case. At all events, this should be done shortly before the accession of each menstrual period, to remove all chances of hepatic or intestinal irritation. During the day, she should take some combination of tonic and antispasmodic remedies, as the pil. galbani comp. gr. viij, and quiniæ disulph. gr. ij, valerianate of zinc, &c., and strictly observe all the general rules for improving the health, as early hours, active exercise, cold washing, friction with a salt towel, &c. She should be warmly dressed; wear the elastic merino next the skin, except perhaps during the summer months, when a dress of elastic cotton may be substituted for it, and great attention should be paid to keeping the extremities warm.

In attending to the symptoms and treatment of dysmenorrhœa arising from inflammation of the os and cervix uteri, I shall confine myself to the shortest possible sketch of this affection, referring my readers for further details to the chapter on this subject.

During the intervals between the periods, the patient is never entirely free from deep-seated pain in the pelvis, extending to the back and each hip, always increased by standing, but particularly aggravated by sitting down suddenly on a hard seat, or the jolting of an uneasy vehicle, and by the passage down the rectum of solid feces; there is constant sense of pain and weight and heat at the lower part of the pelvis—and when the symptoms have been increased by too much exercise, constipation, or the approach of the catamenial period, the pain is not only much increased, but now assumes a peculiar darting character, shooting with sharp and sudden stabs across the pelvis, and known by the name of "*lancinating pains*."

On examination per vaginam, the os uteri is found rather lower in the pelvis than usual, sometimes nearly resting on the perineum; the cervix hard, swollen, and

very tender. The slightest touch brings on severe pain, not only in the part, but also in the back, lasting for some time afterwards. The cervix is hot, and the throbbing of the inflamed vessels can be distinctly felt. The lower segment of the uterus is also swollen and hard, and a thick, white, creamy discharge issues from the os.

As the period approaches, the sense of heat, weight, and distension in the pelvis gradually increases, the pain becomes more severe, the darting pains more frequent, until the catamenia appear; when, if this discharge comes on pretty freely, the distended vessels are relieved, and the pain abates; or, in other cases, especially in those which are assuming a more chronic form, the catamenial discharge is scanty, and of an unhealthy color, being sometimes watery and brown, at others black and grumous. Not unfrequently there is considerable hemorrhoidal congestion, with pain and throbbing about the anus.

The treatment consists in allaying the inflammatory action by leeches and soothing applications, and by rousing the activity of the liver and bowels, and thereby diminishing still further the state of uterine congestion.

Leeches should be applied to the inflamed cervix by means of Dr. Locock's perforated tube, or by a small tubular speculum; or if the os itself is much injected with blood it may be scarified, and thus a quantity of blood drawn off from the inflamed part, with still more immediate relief. The bleeding may be further encouraged, and the pain alleviated by the injection of warm decoct. papaveris; a brisk purge of calomel, with James's powder, and one or two doses of Rochelle salt (sodæ potassio-tart.) the following morning. All drastic stimulating purgatives must be avoided in these cases, as rather tending to increase irritability and pain of the uterus; saline laxatives are more desirable, as they not only relieve the abdominal circulation by producing watery evacuations, but diminish the acid character of the urine which is usually present. These various steps of treatment should be adopted, if possible, at the half-way period, when an increase of pain and inflammatory action is

generally manifested, and should be repeated every month or oftener, according to circumstances. It is also useful in these cases to anticipate the coming on of the period by a brisk mercurial purge, and if there be much hemorrhoidal congestion, to apply leeches to the anus. During the period itself, the discharge may be promoted and the pain relieved by a hot hip-bath, and suppository of pil. saponis c. opio, as recommended in the neuralgic form. During the intervals the part should be soothed by decoct. papav. and goulard, the bowels regulated by occasional doses of blue-pill and henbane, followed by mild laxatives, as above mentioned, and the horizontal posture strictly enjoined. A couple of periods passed under such treatment will usually restore the uterus to a more healthy action, when the general health may be still further improved by a course of tonics.

In dysmenorrhœa arising from irritation of the ovary, the pain is not situated deep in the pelvis, as in the other case, but is confined chiefly to the spot, about an inch above the middle of Poupart's ligament, frequently extending backwards to the vicinity of the sacro-iliac synchondrosis of the same side, and also down the thigh. It is of a dull and peculiarly sickening character; it is increased by exercise, and the passage of constipated feces, but more especially by the approach of the catamenial period, when the sufferings become very severe. On examining externally, the part is frequently observed to be slightly swollen, and pressure brings on the deep-seated, sickening, and peculiarly intolerable pain which is so characteristic of ovarian inflammation; if applied over the painful spot it sends the pains backward to the sacro-iliac synchondrosis of the same side, and it is in this direction that she experiences the severe suffering which is produced by the descent of scybalous matter along the sigmoid flexure of the colon. In by far the majority of cases, the pain is on the left side; indeed I may say that it is the exception to the rule when this is not the case.

On internal examination, we find the os and cervix uteri unaffected. If the patient complains of pain when this portion is touched, it is not because it is tender, but

because the finger has pressed it against the painful spot. On passing up the finger along the side of the uterus, as far as the cul-de-sac of the vagina will permit, we find that we now reach the true situation of the pain, which we had but approximated in our external examination. Generally speaking, a soft swelling of about the size of an olive may be distinguished at this point, which might be almost mistaken for an abscess, if the position of the ovary were not borne in mind; the more so because the slightest touch produces intense suffering, and generally renders it impossible to examine the ovary with any degree of minuteness. Examination per rectum gives the same results. On passing the finger along the side of the uterus, we come to the same spot we had felt per vaginam. During this examination also, we generally find that if we use external pressure on the left groin at the same moment, we shall evidently have the painful body between the fingers of the two hands, and be sometimes capable of slightly moving it. For further details of this affection, I must, however, refer to the chapter on inflammation of the ovary.

At the catamenial periods all the symptoms are greatly increased, and frequently rise to a degree of intense agony. The stomach sympathizes considerably, inducing severe nausea and vomiting; and when the catamenia appear, the discharge is mixed with portions of membranous matter. In some cases the discharge is scanty, and the patient continues to suffer the severest torture for some time, until at length a quantity of these fibrinous exudations is expelled, with more or less relief to the patient's suffering. The quantity of these membranous portions varies considerably; in some there will be merely a few ragged shreds of membrane, whereas in others, large pieces are discharged, sometimes amounting to an entire cast of the uterine cavity. The severity of the paroxysm seems to be inversely to the quantity of the discharge, the relief being in proportion to the quantity expelled. Thus, in some cases a few shreds only are seen in the catamenial fluid; whereas in others the uterine discharge appears to

consist of little else than membranous exudations, which amount to a considerable quantity.

The indications for treating ovarian dysmenorrhœa will be similar to those of the preceding species—viz., to relieve local congestion, allay pain, and restore the general health. If, besides the sufferings at the periods, she is seldom free from ovarian pain during the intervals—if this be brought on or increased by any amount of exercise however slight, by constipation, and by sexual intercourse, leeches applied per vaginam, as near as possible to the inflamed ovary, are of great importance; they relieve the pain in the most decided manner, and frequently render the periods comparatively easy. In milder cases, the application of the linimentum camphoræ comp. with tincture of opium (℞iiss with ℥ss) gives great relief. It should be applied so as to effectively redden the skin of the part short of producing a blister. Leeches applied externally are but of little use; but if applied round the anus, especially where there is hemorrhoidal congestion, they frequently produce great relief, though not so marked as when applied more directly to the inflamed part per vaginam. The half-way time between the periods is usually the best for applying leeches in these cases, as it modifies and controls the slight exacerbation or excitement of the circulation which usually manifests itself at these times; in other cases, it is decidedly better to anticipate the period itself by applying them shortly before it is expected, and thus endeavoring to ward off that amount of congestion and intensity of suffering which would otherwise occur.

In severe cases of ovarian dysmenorrhœa, the use of opiates, locally or generally, will have but little effect in allaying the pain; unless the congested state of the organ be effectually checked by the application of leeches; but in milder cases the precursory abstraction of blood may be dispensed with. Warm or hot injections of strong decoction of poppies thrown up the vagina as she lies upon her back, with the knees drawn up, so as to retain them for some minutes, and particularly the pil. saponis c. opio, as a suppository in the rectum, will afford great

relief. We do not find that relief from sedatives taken by the mouth in this form of dysmenorrhœa which is so remarkable in the neuralgic form; but on the contrary, opiates frequently seem to aggravate the sickness which is so apt to be troublesome here.

Nothing contributes more effectually to diminish the congestion and allay the irritability of the uterine system at these periods than rousing the liver and bowels to active secretion just before the expected time. Besides the ordinary attention which is necessary to the due regulation of these functions, it will be desirable that she should take one or two doses of alterative and laxative medicine shortly before and at the commencement of the period; by this treatment we frequently succeed in checking the sickness more successfully than by any other means, and also save the patient a large amount of suffering.

She should not rise from her bed or sofa during the attack, but strictly preserve the horizontal posture. Indeed, this precaution, in a severe case, is unnecessary, for she feels utterly incapable of rising; and if the pain will allow her to remain quiet in one position, she usually lies on the affected side, with the knee strongly bent upon the abdomen, so as to relax the abdominal parietes as much as possible, and remove all pressure from the inflamed ovary. When able to move, the hot hip-bath will give great comfort, and the opiate suppository, unless it causes headache and aggravates the sickness, may be repeated two or three times as the effect goes off.

Under the head of *mechanical dysmenorrhœa* come those numerous cases where the catamenial secretion takes place naturally, but where, from the contracted or closed state of the os uteri, or canal of the cervix, the fluid is expelled from the uterine cavity with much difficulty and suffering, or is altogether obstructed.

The chief feature, therefore, of this species of dysmenorrhœa is, that *pain precedes the discharge*.

It varies in different individuals—sometimes coming on but a few hours before it; in others, the patient may begin to suffer for days, or even a week, before the ap-

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pearance of the catamenia. This will probably depend on the slowness or rapidity with which the secretion comes on, and on the degree of irritability which the uterus manifests on becoming distended with the menstrual fluid. Hence, when the secretion flows fast, and the uterus resents the accumulation within its cavity, we shall probably have a sharp but short attack of pain; the distension of the uterus, and its own contractions, which are generally quickly excited, producing the requisite degree of dilatation for the discharge of the fluid. If the pain commences some days before the appearance of the discharge, the patient is warned of its approach by a sense of weight and distension in the pelvis, with feeling of discomfort. This soon amounts to catamenial pain, occasionally producing, from the increasing size of the uterus, frequent desire to relieve the bladder, and pain on evacuating the rectum.

In mild cases, a moderate amount of distension is sufficient to effect the necessary degree of dilatation of the os uteri, and the accumulated fluid is discharged with complete relief to the patient; but where the obstruction is greater, and produces greater resistance, the accumulation goes on, the pain becomes more severe, and now, as the uterus is roused to contract upon the retained fluid, she experiences exacerbations of intense suffering, similar to the severe pain which is sometimes seen in bad cases of abortion, or early miscarriage, until after a long and agonizing struggle the obstruction is overcome, and the discharge takes place. In severe cases of this sort the uterus becomes so much distended by the accumulation of menstrual fluid within its cavity, that in these subjects the fundus may be plainly felt above the symphysis pubis, so that the patient herself notices it. As soon as the obstruction is overcome, and the discharge commences, the tumor gradually subsides. (See case of Mrs. T., *Medical Times*, Oct. 26, 1844, page 74.)

In cases of obstructive dysmenorrhoea of this severe character, the uterine system, as well as the general health, suffers considerably. She has scarcely recovered from the effects of one period before the next is warning her

of its approach. The uterus becomes enlarged by this periodical distension, so that the ordinary internal measurement of two inches and a half from the os to the fundus, will become three inches, or even more. The uterus, from the increased size of the cavity, never clears itself entirely of the secreted fluid, but more or less of it continues to be retained. After a time, the watery portion becomes absorbed, leaving what remains, of a dark, thick, treacle-like consistence, to be evacuated at the next time. Hence it is that in passing the sound, or dilating the os uteri in these cases, a quantity of dark-brown slimy fluid frequently besmears the instrument, and the patient has a discharge of a similar character for a day or two afterwards, with much relief.

It will be evident that considerable derangement of the chylopoietic functions will be an almost necessary result of such severe uterine irritation and suffering. The stomach, liver, and bowels become deranged, with more or less hemorrhoidal congestion and loaded urine; and this condition reacts on the uterine system, and increases the irritability and suffering at the next period. She has a constant sense of weight and distension in the pelvis, with bearing down; irritability of the bladder, with frequent desire to pass water, and difficulty in doing so;—this amounts occasionally to a degree of strangury, especially if she stands for any time, when these symptoms are increased by the weight and pressure of the distended uterus. There is also frequent pain along the rectum, and difficulty in passing solid feces.

Obstructive dysmenorrhœa seldom continues for any period of time, without producing more or less ovarian irritation, which tends to complicate the case by its own peculiar symptoms and appearances, and not unfrequently adds severe menorrhagia, thereby rendering it more dangerous for the patient, and more difficult for the practitioner. In some cases, the ovary undergoes considerable enlargement, and this is attended with serious losses of blood, and great suffering. (*Medical Times*, Feb. 14, 1845.)

There is no doubt that a large number of cases of ob-

structive dysmenorrhœa are due to a congenitally contracted state of the os uteri, or canal of the cervix; and accordingly we find that, in many or most of these cases, the patient has suffered at her catamenial periods from their first appearance; in others it has come on somewhat later; in others, not until marriage. The catamenia may be obstructed in cases of retroversion and anteversion of the uterus, where the os uteri internum or canal of the cervix becomes more or less closed, owing to the bent state of the part in these displacements. In those cases which are occasionally seen to occur for the first time after marriage, it is probably owing to the congested swollen state of the lining membrane, obstructing still further a canal or orifice, which, though contracted, had, nevertheless, till then allowed the discharge of the catamenia without any peculiar difficulty. There can be little doubt but that the obstructive dysmenorrhœa which is sometimes seen in connection with rheumatic-gouty habits, arises from a similar condition of the mucous membrane lining the os and canal of the cervix uteri.

The treatment of obstructive dysmenorrhœa consists in first attending to the general health, and rectifying any derangement which may have occurred, and in effecting the necessary degree of dilatation of the os and cervix uteri as shall remove the obstruction which has hitherto existed to the discharge of the catamenia. The dilator which I have been in the habit of using for many years is well known in the shops of our principal instrument-makers, and is, I think, the safest and best adapted for the purpose. The blades being made of well-tempered steel, readily yield to any resistance which they may meet with, and thus modify greatly the force which is applied to the part; while the steady pressure which they exert, when opened in the canal of the cervix, and allowed to remain so for a minute, rapidly effects a considerable degree of dilatation. When this is done but a short time before a period the relief is frequently very striking. The discharge appears freely, with little or no precursory pain, and the patient declares that she has never known

a period to pass so easily. If the dysmenorrhœa has been habitual, the dilatation is usually followed by a discharge of that dark slimy matter which I have described under the head of amenorrhœa, where the catamenia have been retained by some mechanical obstruction, and where, in the present instance, the uterine cavity had remained filled with catamenial fluid since the last period. How far the effects of this mode of dilating the os uteri will be permanent, must always be uncertain; they vary greatly in different individuals. In some the os uteri returns to its former condition in twenty-four hours, in others the dilatation seems to be nearly or quite permanent.

A still further and more permanent degree of dilatation may be effected by the introduction of a sponge tent, which, when well made and skilfully introduced, completely dilates the whole canal of the cervix during the night, with but little pain, so that the finger may even pass into the uterine cavity, when the sponge is removed the next morning. Generally speaking, it is desirable to use the dilator first, to produce a certain amount of dilatation, which can then be followed up by the action of the sponge tent. Professor Simpson was the first to point out the use of metallic tents of different sizes, which are worn for some weeks, and there is no doubt that the dilatation which they produce is more permanent than either of the above-mentioned methods. In some patients, however, they produce severe irritation, whereas in others they are not only borne easily, but with great relief.

Where these means of dilating the os and cervix by stretching have failed, we have no choice but of dividing the contracted portion, by means of the *bistouri cachée*, which Professor Simpson first used for the purpose. The operation is neither difficult nor peculiarly painful; the incision commences at the os uteri internum, gradually increasing in depth as it descends towards the os uteri externum, or os tinæ, just above which it should have completely divided the wall of the cervix. Generally speaking, one incision, viz: in front, is sufficient; the amount of discharge is usually not more than takes place

at an ordinary catamenial period. It is desirable that the operation should be performed as near to the half-way time as possible, so as to diminish the chances of any profuse discharge. In one or two days afterwards a smooth metallic tent must be introduced, so as to prevent the part from closing by cicatrization; and, to insure a canal of the requisite size, this should be retained for a couple of weeks, when it may be safely removed. Professor Simpson prefers making two incisions, one on each side; the hemorrhage is usually more profuse, but the plan has this advantage, that the metallic tent is seldom necessary afterwards, and thus saves the patient some annoyance.

Strict attention should be paid to the general health, both before the period, and during her recovery from it, and the same plan of treatment carried out for regulating and giving tone to the chylopoietic functions which has been already described. If the disease be not distinctly dependent on congenital formation, but has come on later, it is probably owing to a swollen or congested state of the mucous membrane lining the canal of the cervix uteri, where it happens to be somewhat more contracted than usual. We see this in cases of a rheumatic-gouty habit, and in others where there is general want of tone—the parts flabby and relaxed. In this last-mentioned state, the condition of the tongue and feces frequently corresponds in a striking manner with that of the os and cervix uteri: the tongue is large and flabby, the throat relaxed, the uvula pale and elongated, the tonsils swollen.

CHAPTER III.

MENORRHAGIA.

THE subject of menorrhagia, or profuse menstruation, is one of even greater extent, and certainly not less importance, than the two derangements of the menstrual

function which have been considered in the previous chapters, and, like them, presents itself under a great variety of forms, as different as the treatment which they require.

To render this subject strictly practical, or, in other words, to make my observations upon menorrhagia as available as possible for the diagnosis and treatment of those cases which the reader meets with, I must avoid the arbitrary divisions of schools and books, and consider the various modifications which the affection presents according to the nature of the causes which produce them. The differences which menorrhagia presents, as regards the discharge, are but of little importance in comparison with an accurate knowledge of the circumstances which induce it, for until we have mastered this part of the subject, we can neither hope to gain clear or orderly notions about it, or treat our patient on certain rules, or with justifiable hopes of success.

I must therefore, *in limine*, discard the old arrangement of menorrhagia into the active and passive forms, although I freely acknowledge that, as far as it goes, it is essentially practical, and that the subject has been admirably treated by Dr. Locoek under these heads (*Encyclop. of Medicine*); but a little examination of it will show that they are quite inadequate to comprehend menorrhagia in all its varieties, or to afford simple and successful rules for treatment. The difference between active and passive menorrhagia is, after all, a question merely of degree, depending chiefly on the state of the circulation and power of the individual system; and between these two extremes we have every possible shade of variety, not only in different patients, but in the same person at different times. We might as well attempt to bring the various forms of diarrhoea under a similar arrangement, depending on the violence, &c., of the attacks, and without reference to the causes which had induced them.

Viewing the subject in this way, we must first ascertain what are the conditions which cause the menstruation to be profuse, or, in other words, which induce menorrhagia, for it is by a careful investigation of the symptoms which point out these conditions, that we can hope to under-

stand the varieties of menorrhagia as they really present themselves in practice. As to the varieties which are observed in the discharge itself, either as to quantity or quality, these (with one or perhaps two exceptions) are but of little value, and beyond the mere question of immediate danger from loss of blood, lead to no practical result in the treatment of the affection.

I propose, therefore, to consider the subject under the following heads, which are, in fact, so many *causes* of menorrhagia:—

Menorrhagia from hyperæmia, commonly called active menorrhagia.

Menorrhagia from gastro-bilious derangement, including the arthritic or rheumatic-gouty diathesis.

Menorrhagia from mucous irritation.

Menorrhagia from ovarian irritation.

Menorrhagia from debility, passive menorrhagia.

Menorrhagia from displacement, organic disease—polypus.

There can be little doubt that an overloaded sthenic condition of the circulation is, *per se*, capable of inducing menorrhagia, to which the term “active” may be justly applied; but I am convinced that this form of the affection occurs very rarely, and that the majority of cases which have been called active menorrhagia have depended on some of the other causes I have just enumerated, but probably aggravated by occurring in a full habit.

The general symptoms in a patient suffering under active menorrhagia are very characteristic: the flushed face, suffused eyes, heat and fulness of head, with throbbing headache; the skin hot, the pulse full and vibrating. The ordinary local symptoms of the coming attack are simply the precursory ones of a common menstrual period greatly exaggerated. She has severe pain of the back and loins, with sense of weight, fulness, heat, and throbbing about the pelvis and sacral region, and when the discharge makes its appearance, it usually comes on with considerable violence, bursting forth in gushes of pure blood, with the occasional discharge of large clots—then abating for awhile and returning again with increas-

ed violence, either from the patient having moved, or from some little emotion of the mind, or more frequently from no very evident cause beyond that the overloaded circulation has not yet fully relieved itself. In this way the discharge continues to return in paroxysms of more or less severity, until the force of the circulation is sensibly affected; the pulse has now become soft and weak, the flushed face is pale, the heat of the surface is reduced, and the patient is left perhaps weak, but greatly lightened and relieved of all her symptoms.

In many cases, although severe, the attack is short; the circulation has been reduced to the natural standard, and the discharge either ceases, or continues for a short time in the moderate degree of a common menstrual period. Frequently, however, it returns in repeated attacks of great severity until the patient becomes much exhausted, and is left exsanguineous and feeble. Even if an attack of menorrhagia be purely of the active character in the first instance, it does not long remain so, and if the succeeding periods be still attended with a profuse discharge, we shall find that some one of the other conditions, which I have enumerated, exists to keep it up.

During the interval after the first attack, the system may perhaps have recovered strength and vigor to give the next period the same active character, and for the discharge to assume, to a certain extent, the same violence as before; but it is evident that this condition of the circulation soon relieves itself, and if the menorrhagia continues in the succeeding periods, it is equally evident that, as the congested, overloaded state of the circulation no longer exists, the profuseness of the catamenia must depend upon some other cause, which it will be the duty of the practitioner to ascertain, in order that he may form an accurate opinion, both as to the nature of the case and his plan of treatment.

The causes of active menorrhagia are all those which tend to engorge the circulation, and to excite the action of the heart; the one the predisposing condition, the other the proximate cause: the one produced by indulgence in rich, nourishing food and stimulating drink; by

indolence, want of exercise, and luxurious living: the other brought on by violent mental emotions, and by inordinate exertions *occasionally* made, when otherwise the patient is unaccustomed to them.

During an attack of active menorrhagia, our object must be to lower and calm the inordinate activity of the circulation, and enable the uterus to maintain such an amount of contraction as shall control the effusion of blood within safe and moderate limits. Rest, in the horizontal position, is absolutely necessary. The patient must be placed upon a hard mattress, and covered as lightly as the season will permit with safety; cloths wrung out of vinegar and water should be applied to the vulva and mons veneris; a large enema of tepid, or (if in summer) cold water should be thrown up the rectum; she should take from three to five grains of calomel made into pills with extr. hyoscyami or lupuli, and in two or three hours afterwards small doses of sulphate of magnesia or soda, in infusion of roses, acidulated with sulphuric acid, to be repeated every hour until a brisk action of the bowels is established. If the hemorrhage be so profuse as to threaten immediate danger, or does not appear to yield to the above means, the vagina should be plugged by a piece of sponge wrung out of vinegar or alum-water, rolled up tightly into a ball, and passed into the vagina, which it fills as it expands, and the blood coagulating in the cellular structure of the sponge forms a strong clot which completely seals the canal. The throwing up a large enema of tepid water acts beneficially in many ways; by thus applying cold immediately along the posterior wall of the uterus, we not only produce a considerable check upon the activity of its circulation, but stimulate the organ to a firmer state of contraction, which will exert a powerful control on the profuseness of the discharge; and, though last, not least, it will effectually clear the rectum of any fecal accumulations which may have existed, and necessarily tend to aggravate and keep up the discharge.

It is important to premise a dose of calomel in this case, even if there be no torpidity of liver or derangement of

bowels; for, by thus rousing these organs, which are so copiously supplied with blood, to active secretion, we produce a powerful diversion of the circulation towards them, and relieve the uterine system in proportion. The exhibition of saline laxatives afterwards, in small and repeated doses, is of great service, as they not only diminish the power of the circulation by draining watery secretions from it, but produce another effect which we may be assured is of no slight importance in every form of menorrhagia—viz: that of reducing the bulk of the abdominal contents, and thereby diminishing pressure upon, and obstruction to, the returning circulation of the pelvic viscera. In the present case, the well-known solution of Epsom salts, in infusion of roses, with an extra proportion of sulphuric acid, is valuable. "The fact," as Dr. Stevens remarks, "has long been admitted, that the acids reduce the force of the circulation;" and I may add that none shows such efficacy in this respect as the sulphuric.

Abstraction of blood, whether general or local, can seldom be justifiable *during* an attack of active menorrhagia, however valuable it may be as a prophylactic; the powers of the system are too quickly reduced by the torrent which issues from the uterus to render any artificial loss necessary, and it must rather be our object to divert the circulation into other channels, and enable the uterine vessels to regain their healthy state. Styptics, astringents, and the whole class of medicines of this character, whether taken internally or applied locally, are worse than useless in this form of menorrhagia, however valuable they may be in the passive form. The great point is to allay the excitement of the heart and circulation before the loss has gone to such an extent as to bring on that calm which is nothing more than a state of exhaustion and collapse. After venesection, there is nothing which exerts so powerful an effect in calming the tumult of the circulation, and equalizing its distribution, as a decided dose of calomel; and if followed up by salines, as above mentioned, will soon produce the desired result.

It will be necessary for the patient to preserve a state of perfect rest for at least twenty-four hours after the

hemorrhage has entirely ceased, and only to move sufficiently to allow her soiled clothes to be changed, and to permit of the necessary evacuations. The mind should be kept as quiet as possible, and every source of mental excitement carefully avoided.

During the interval before the next period, much may be done, not only to restore her strength, if it has been considerably reduced, but to adopt such measures as may prevent a recurrence of the menorrhagia. The liver and bowels should be carefully watched; she should keep early hours, use a light, simple diet, take moderate exercise, and lie down on a sofa at least once a day, for an hour or two. If the pulse be gradually increasing in power, and betraying that vibrating character which may render a return of the menorrhagia probable, the half-way period should be selected as the best time for commencing more decided prophylactic measures. She should take a mild alterative, followed by a saline laxative the next morning, and if she feels any return of that heat, weight, throbbing, &c., which preceded the menorrhagic attack, it will be desirable to apply four or six leeches to the anus. During the week before the catamenia are expected, she should be seldom off the sofa, except to merely cross the room, or get into a carriage to drive out; the rest of her time should be spent in the recumbent posture. An active dose of calomel should be given about two days before the period, and the liver and bowels well cleared. If these precautions fail, the probability is that some of the other causes of menorrhagia exist, which will require due investigation. Active menorrhagia, I repeat, is a rare disease, and I have great reason to suspect that it rarely occurs except arising from, or complicated with, those conditions which I now proceed to describe.

In considering the menorrhagia which arises from, and is modified by, the various conditions of the system, and the other causes which I have enumerated, it must be borne in mind that the active or passive character of the attack will entirely depend upon the state of the individual patient—her strength, and the power of her circulation. This question, however, is not of such im-

portance as might be supposed; for as the majority of these causes of menorrhagia exert more or less a depressing influence upon the system, we seldom find that any great amount of vascular excitement has been manifested, even in the earliest attacks, like that which characterizes active menorrhagia; the menstrual periods have gradually become profuse—but even before the strength had suffered from the loss, the circulation had betrayed little or no increase of its natural power or activity. Although profuse, we cannot characterize the discharge as active—it is profuse menstruation, arising from a certain condition of the system, or from certain local causes, the symptoms of which will more or less modify the character of the attack; and the careful investigation of these causes will be our surest guide in the treatment of it.

Under the head of *gastro-bilious derangement* come those cases of menorrhagia which arise from the returning abdominal circulation being more or less obstructed by constipated and loaded bowels, or by torpid and congested liver. The sallow, dusky complexion, with a purple tinge when flushed; the dark ring beneath the eyes, and yellow tinge of the sclerotic; the furred, sulcated tongue, the frontal headache, the cold extremities, the aching lassitude of limbs, the distended abdomen, with a heavy, doughy feel of solidity, so different to the light elastic state of it in health; the loaded condition of the urine, the occasional presence of piles, and above all the constipated bowels and their unhealthy contents, are the features which chiefly characterize this form.

It is in menorrhagia arising from this class of derangements, that we so frequently (perhaps always) observe an intimate connection between it and the hemorrhoidal habit. It is, in fact, the same cause (obstruction to the returning abdominal circulation), in the one case acting on the uterus, in the other on the network of veins about the lower part of the rectum; the cause is the same, but its effects vary according to the organ or part which it acts upon; but whether it is the uterine or hemorrhoidal vessels which suffer, the treatment must be equally of a constitutional character. An ordinary hemorrhoidal at-

tack is not looked upon as a local disease, but merely as a local symptom or manifestation of a general condition of the system, and constitutional treatment is had recourse to in order to remove or lessen the constitutional cause before local remedies are applied. In the present case the abdominal venous circulation has become more and more congested; the menstrual discharge has gradually increased in quantity as the relief was thereby required to be greater; and in proportion as the health and strength have yielded under the depressing effects of gastro-bilious derangement and periodical attacks of profuse loss, the case has gradually assumed the characters of passive menorrhagia, the symptoms of which are more formidable, and the treatment more difficult.

In proportion as the powers of the system give way, so does the contractile tone of the uterus diminish, until it can exert scarcely any control over the vessels which open into its cavity, and which therefore pour forth their contents, unrestrained by uterine contraction. It will, therefore, be easily understood that not only do the periods become longer, as well as more profuse, but the intervals shorter and more irregular;—in other words, it becomes a case of passive menorrhagia, the further details of which I will delay until I come to that subject.

There is no doubt that menorrhagia from gastro-bilious derangement may occasionally show itself in a more sudden and violent manner from accidental causes. Thus, violent excitement of the circulation of any kind under such circumstances of uterine congestion, would be liable to hurry on an attack of menorrhagia, much sooner and more violently than would otherwise have been the case. Under such circumstances, we may be required, during the attack, to adopt some of those measures which have been recommended in active menorrhagia; but it must be ever remembered, that, although necessary for the moment, these remedies will not touch the real cause, the removal of which alone can afford us any legitimate hope of curing the affection.

It is of the greatest importance to gain accurate information as to the state of the bowels in these cases, beyond

the fact of mere regularity. It is well known that the bowels are frequently moved with great regularity, or even disposed to diarrhoea, where considerable torpidity of the liver exists, and where, but for a due investigation of these matters, the attention of the practitioner may be led from the real cause upon which the affection depends. The sallowness of the face and conjunctiva—the pain of the right shoulder and tenderness of the right hypochondrium—the discomfort in trying to lie upon the left side—and above all the clay-colored and offensive evacuations, will generally point out this condition with sufficient accuracy.

In this case the treatment is sufficiently obvious. Five grains of blue pill, or (if her strength can bear it) of calomel, with enough of extr. hyoscyami or lupuli to make it into two pills, should be given immediately. The presence of the menorrhagia is no contraindication, for the hemorrhage will frequently begin to abate as soon as the medicine has taken sufficient effect upon the system; and so far from weakening her, its action on the liver and bowels will give her relief and a feeling of strength. If given at night, the bowels should be well cleared out the next morning by a dose of rhubarb and magnesia, or the well-known combination of tartarized soda, manna, and rhubarb. For the first few days it is better to attend solely to the process of rousing the excretory functions and freeing the circulation from those impurities which it has gradually accumulated. It will therefore be desirable to repeat the blue pill and draught every other night and morning, whilst during the day she takes some saline combination, as in the annexed form:—

R.—Potassæ bicarbonatis . . .	Div;
Potassæ nitratis . . .	℥ij;
Spir. ammoniæ aromat. . .	℥ss;
Aquæ destillatæ . . .	℥viiss.

M. Fiat mistura, cujus sumat cochl. magna ij ter die post cibum.

And this treatment should be continued until the evacuations have lost their unhealthy character. It will be desirable to continue the blue pill once a week for some time longer, at any rate until the next period. At

the end of a week or so the laxative may be changed for one of a different kind, and there is none which acts so effectually in a case of this sort, as the combination of ferri sulph. and magnesiæ sulph., with a slight excess of sulphuric acid, as in the following formula:—

R.—Ferri sulphatis . . . gr. xvj;
 Magnesiae sulphatis . . . ʒj;
 Acidi sulphurici, dil. . . ʒi;
 Syrupi rhœados . . . ʒss;
 Aquæ menthæ pip. . . ʒviiss.

M. Fiat mistura, cujus sumat cochl. magna ij primo mane.

Being a tonic as well as a laxative, the patient can continue its use with benefit for a longer time than almost any other; and it has the great superiority over other laxatives, that, after a long course of it, the bowels, so far from becoming dependent upon medicine for their regular action, are now more disposed to act of themselves than before.

I cannot agree with the commonly received opinion that preparations of iron possess emmenagogue properties, except it be indirectly as tonics in the amenorrhœa of debility. Ample experience has long convinced me that, at least two of them, viz., the sulphate and hydrochlorate of iron, produce very opposite effects in passive menorrhagia, and by giving tone to the vessels, tend not a little to control the profuseness of the discharge. The combination of persulphate of iron and magnesia, is one of peculiar value, not merely as an effective laxative, which may be continued for almost an indefinite time, but which, from its pervading the entire contents of the bowels (as evinced by their dark color), appears to rouse the muscular coat to greater contraction, and not only to prevent the passive distension of the bowels from flatus and feculent matters, but also to diminish the calibre of the intestinal canal, and so to reduce the general bulk of the intestines. We thus fulfil a most important indication, viz., removing a considerable pressure, and therefore obstruction from the returning abdominal circulation, and diminish, in no slight degree, the engorgement of the uterine vessels.

If this form of menorrhagia has been preceded or

accompanied by more or less hemorrhoidal congestion, which still continues to show itself in spite of the treatment just mentioned, the application of four leeches to the anus at the half-way period (unless contraindicated by the pulse) will be of great value, for, besides diminishing the fulness of the pelvic circulation, a small abstraction of blood from the vessels of the rectum decidedly relieves the portal system, and renders the liver more subservient to the remedies we employ for rousing the activity of its secreting powers.

The approach of the next period should be anticipated by repeating the blue pills for one or two nights before the expected appearance of the discharge, and acting a little more briskly on the bowels by the laxative which I recommended.

If the patient's strength has been so reduced as to require tonic treatment, I must refer to my observations on passive menorrhagia.

The diet should be nutritious and easily digestible; she should use copious sponging with cold water every morning, with active friction, especially with a salt towel after the surface has been dried; she should take a short but brisk walk once or twice a day; should lie down, if possible, after each walk, and avoid much standing.

In cases where menorrhagia is connected with that derangement of the assimilating functions, which (though imperfectly) is best expressed by the term gouty, or rheumatic-gouty diathesis, a number of symptoms will present themselves to the attentive observer, which will scarcely fail to guide him in his diagnosis of the case. The amount of intestinal and hepatic derangement is probably not in proportion to the menorrhagia. The patient has rheumatic pains about her large joints, or swelling and stiffness of the smaller ones; she has probably suffered from, and is still liable to, neuralgic pains of the head and face; the bowels are unhealthy, but not necessarily confined, and sometimes are even relaxed. The urine is generally much loaded, being high-colored, and becoming thick on cooling. There is much of that variable dyspeptic derangement and flatulence, which shows more or

less disposition to be metastatic with these various neuralgic or rheumatic affections, or with the menorrhagia itself. Her history will also show, in all probability, that she has been a sufferer from rheumatism or neuralgia in some form or other, or has actually had rheumatic fever or a fit of gout.

For a further detail of the symptoms which indicate the influence of a gouty taint upon the uterine system, I must refer to a full consideration of this subject in my chapter on dysmenorrhœa.

The treatment of menorrhagia arising from a rheumatic-gouty condition of the system, will be essentially different to that which I have been just considering, viz., where the profuseness of the catamenia is produced by the pressure of loaded bowels, torpid liver, &c., obstructing the free return of blood from the pelvic viscera. In the present instance, it is a case of blood poisoning, where nature seeks to rid herself of the evil by localizing it upon some particular organ or tissue. In the male we should see the well-known phenomena of a gouty paroxysm, whereas in the female, the part most usually attacked is the uterus; as indeed might have been expected from the periodic congestion and other changes which it undergoes.

There are not the same indications for active purging as in the former case: a mild dose or two of alterative medicine may be used, or, if the circulation be strong, and the power of the system equal to bear it, the following pill will be useful:—

R.—Hydrarg. chloridi,	Pulv. ipecacuanhæ,	} ʒʒ gr. j.
Extr. colchici acetici,	Extr. aloes aquosi,	
M. Fiat pil j.		

A mild laxative of pulv. guaiaci and magnesia (ʒʒ gr. x), will be found better suited to the symptoms, and she should take a combination of liq. potassæ and potassii iodidi, as in the following formula:—

R.—Liq. potassæ	.	.	.	ʒiiv;
Liq. taraxaci	.	.	.	ʒj;
Potassii iodidi	.	.	.	gr. xvj;
Decoct. sarzæ co.	.	.	.	ʒvij.

M. Fiat mistura, sumat cochl. magna ij ter die post cibum.

The surface should be kept warm by proper clothing; the diet regulated by the well-known rules where this diathesis of the system is present; and if the powers of the system do not rally sufficiently under the above treatment, a gentle course of tonics, with the nitro-muriatic acid, will be desirable, together with change of air.

There can be no doubt in some of these cases, where menorrhagia is evidently connected with, and dependent upon, derangement of the chylopoietic organs, or assimilating functions, and where there is a low feeble rheumatic, or rheumatic-gouty condition of the system, that both the general and local affection may be dependent upon the damp, malarious, or otherwise unhealthy nature of the locality in which the patient resides. It is well known that in certain districts of this character, passive hemorrhage of various forms occurs more frequently than elsewhere, and I have long felt convinced that in certain susceptible and predisposed systems, this set of causes is quite sufficient to keep up a constant disposition to menorrhagia, in spite of the most careful and well-directed treatment. Removal to a healthy locality is immediately succeeded by a cessation of the menorrhagia, which reappears as soon as she returns to her former residence. (See case of Mrs. S., *Med. Times*, Aug. 26, 1854.)

The connection of menorrhagia with mucous irritation of the bowels is another modification of the different species of the complaint which I have been describing, and is not unfrequently a condition into which they pass, either from the patient being naturally predisposed to this state of bowels, or from its having been induced by their long-continued unhealthy contents, or by the habitual constipation at length setting up intestinal irritation. This irritable state of the mucous membrane of the bowels is occasionally the sequela of former attacks of diarrhœa, dysentery, or cholera, which leave such a morbid sympathy between the external surface and mucous lining of the intestines that the slightest chill, or alternation of temperature, is liable to induce an attack of diarrhœa. The liver is either torpid, or readily becomes so, from the

same cause, and the clayey motions which result increase the irritability of the bowels. The uterus sympathizes with this condition of the intestinal canal; the periods are preceded by more than ordinary pain, and frequently for a longer time than usual before the discharge appears, and not only is the discharge itself more profuse, but it is generally attended with clots.

In the early stages of the complaint, a few doses of hydrarg. c. creta, combined with pulv. ipecac. comp., will be of great service in obtaining a flow of healthy bile into the intestinal canal, which is well known to exert a considerable influence in allaying its irritability; but if the affection be of longer standing—if the tongue is becoming red and glazed, mercurials are apt to increase the mischief which we are trying to relieve. Taraxacum, combined with lime-water, or with equal parts of it and the compound decoction of sarsaparilla, now becomes a most valuable remedy; or it may be combined with the common *mistura cretæ* of the Pharmacopœia. Opium, in the form of Dover's powder, is of great use in checking the irritable action of the bowels, but it is questionable how far the preparations of it are desirable, from their tendency to derange the digestive organs and mask the real features of the case.

If the affection be one of some standing, and shows a tendency to assume the chronic form, with the frequent discharge from the bowels of large portions of ropy mucus—a condition which is frequently most intractable and difficult to cure—I have found striking benefit produced by swathing the abdomen with a bandage wrung out of hot water, and then covering it with another one of dry flannel, or pinning a warm woollen shawl round her. The whole surface of the abdomen is thus kept in active perspiration for some hours, producing a powerful effect on the irritable intestinal canal beneath; and by a steady use of this application, in conjunction with the remedies above mentioned, the bowels resume a healthy action, and the next catamenial period will seldom fail to show a marked improvement in its course.

In describing the menorrhagia connected with ovarian

irritation, I must premise that my readers are supposed to have made themselves acquainted with that part of the chapter on dysmenorrhœa which treats of painful and abnormal menstruation from an irritable or inflammatory condition of the ovaries. The dull, sickening character of the pain (usually of the left side), a little above the centre of Poupart's ligament, extending down the thigh, and also backwards towards the sacro-iliac synchondrosis of the same side; the tenderness on pressing the part, which is frequently somewhat swollen; and the almost invariable appearance of membranous exudations in the discharge, afford sufficient evidence of ovarian suffering, which may be still further confirmed by examination per vaginam when the attack is over.

The amount of catamenial discharge in patients suffering from an irritable or inflammatory condition of the ovary varies exceedingly. At times the loss is enormous, and evidently depends on the ovarian affection, because the moment this is relieved, the menorrhagia ceases. For the treatment of this form of the complaint, I must refer to the chapter on oophoritis, and also to that part of dysmenorrhœa which relates to this subject.

The menorrhagia from debility (*passive menorrhagia*) is a subject of great importance, because all the above-mentioned forms tend sooner or later to lapse into that state of prostration, atony, and thoroughly broken health which give the distinctive characters of this condition.

Although the patient may not have suffered to any extent during the first attacks of menorrhagia, from the vigor of her constitution enabling the system to recruit her strength during the intervals, yet as each returning period finds her weaker, so does the contractile power of the uterus become more feeble and imperfect, and less able to control the force of the circulation; the periods themselves become longer and more profuse, and the intervals between them shorter, until one has scarcely terminated before the next is about to commence.

When once the system has been lowered beyond a certain degree by repeated losses of blood, a variety of symptoms arise, depending upon the state of anæmia. The

patient suffers from intense vertex headache, accompanied with tinnitus aurium and occasional loss of vision; her nights are passed in restless wakefulness, or in unrefreshing slumbers, disturbed by frightful dreams, sometimes approaching nearly to delirium. The extremities are cold, the skin pale, clammy, and easily excited to profuse perspiration, without a corresponding increase of heat of the surface; the spirits are much depressed, and she experiences strange associations of ideas, over which her mind appears to have no control: "if this goes on, I shall lose my senses," is a remark we frequently hear from patients under these circumstances, and the apprehension of such a result tends to depress her still further. The digestion is impaired, and in extreme cases the stomach becomes so irritable that it will retain food with great difficulty. The bowels are easily deranged; in fact, it becomes nearly impossible to keep them from falling into one extreme or the other, and diarrhoea is a frequent result, which weakens her still more. From the relaxed state of the uterine and vaginal vessels, leucorrhœa is almost constantly present during the intervals, and sometimes to a very profuse degree. The menorrhagia is now brought on by the most trivial causes—the mere effort to sit up and raise herself in bed; straining to evacuate the bowels, which, under these circumstances, are very difficult to regulate; a slight perspiration induced by the warmth of the bed, or by a little warm drink, &c.

The state of mental depression which attends this condition, exerts the most unfavorable effects upon her. A mere question as to her symptoms or progress by her medical attendant will frequently produce a fit of hysterical tears, which will almost certainly be followed by a return of the discharge.

Passive menorrhagia, as its name implies, is preceded and attended by few or none of the local symptoms with which the other forms are. It is essentially a condition of atony and prostration, and the blood oozes from the relaxed vessels, uncontrolled by the ordinary tonic uterine contraction which is the characteristic of health. The uterus is usually large and flabby, and lower in the vagina

than natural; the cervix is short, thick, and soft; the os partially open and very lax.

Passive menorrhagia is not only the result of repeated attacks of the other forms of menorrhagia—it frequently occurs in consequence of abortion—where she has suffered considerable loss at the time—where the uterus has continued relaxed, and longer than it ought to be; and where, probably in consequence of getting up too soon, an amount of partial prolapsus has been produced.

Severe mental depression of itself will occasionally bring on profuse menorrhagia of the passive kind in patients of a relaxed habit of body. Indeed, the most alarming case I ever witnessed arose from this cause; and as it is impossible to control the depressing effects arising from the mental shock she has received, it becomes at times very difficult to stop the discharge while the moral cause continues to exert its influence upon her.

It will therefore be seen that any circumstances which tend to lower the strength and relax the tone of the system, are liable to produce passive menorrhagia. Thus, confinement to heated rooms, breathing an impure atmosphere, late hours, and but little exercise in the open air, strongly predispose to it. Hence we find cases entirely depending on the nature of the patient's residence; as long as she lives on high ground, and breathes a dry and bracing air, her menstruation is perfectly healthy; but as soon as she ventures to reside in a low, marshy, or malarious district, the catamenia become gradually more and more profuse, until passive menorrhagia is established.

The treatment of atonic or passive menorrhagia, during an attack, will be guided by indications very similar to those for treating a case of hemorrhage from relaxed uterus after the birth of the child. The uterus will be found flabby, relaxed, and powerless; our first object will therefore be to excite some amount of contraction, by which, and by which only, the discharge can be stopped. A cold wet napkin suddenly flapped upon the abdomen, so as to produce a shock, or even a douche of cold water, as in an ordinary case of flooding after labor, will generally rouse sufficient uterine contraction to stem the loss

which is going on. The use of ice, applied over the abdomen, or even passed into the vagina, is a mischievous error, arising from an imperfect apprehension of the real nature of the case, and not only fails to produce uterine contraction, but from its continuous application the cold soon loses its tonic effect, and becomes a sedative of a highly depressing character. It is by the *sudden* application of this powerful agent and for a few seconds at a time only, that we can expect to rouse the contractile power of the uterus. It is therefore desirable to dry the abdomen with a warm napkin as soon as the wet one has been removed, so as to increase the shock of the next application. For similar reasons, the sudden injection of some cold water into the vagina is frequently of great service, and it may be also used in the rectum, for the double purpose of inducing uterine contraction and removing fecal accumulations. It is in these cases that the *secale cornutum* has shown itself of such value, and ought to be administered at once, if the stomach will bear it. The fresh ground powder, suspended in cold water, is decidedly the best form for obtaining its full power, and the combination with it of the biborate of soda in cinnamon-water, rendered stronger by the addition of some spirit of tincture of cinnamon, appears to be the most effective form for administering it.

If these means do not control the hemorrhage, or it returns, as before remarked, from some very trifling cause, it will be better to plug the vagina without further delay. In this respect we possess an advantage over a case of hemorrhage from uncontracted uterus after the birth of the child, where, by the use of the plug we should only convert an external hemorrhage into the still more dangerous internal form; for the blood being prevented escaping, would accumulate in the cavity of the uterus, which in its atonic state will readily enlarge to the size it was before the birth of the child, and therefore become capable of containing a quantity of blood, more than enough to destroy the patient's life. In the present instance we have not this cause for apprehension; the uterus, in its relaxed state, is no doubt much larger than

natural, and its cavity, therefore, capable of containing much more blood than the unimpregnated uterus in a state of health ought to do, and this will be especially the case if she has had children; but still the amount will be comparatively small, and unless the plug has been had recourse to too late, the loss of blood into the uterine cavity will not be dangerous.

To support the feeble contractile power of the uterus, by means of external pressure, is as important here as in the parallel case of hemorrhage after labor; and by its aid the uterus is frequently enabled to maintain the necessary degree of contraction, where otherwise it would have yielded, and the bleeding have returned. A thick compress (a small thick book wrapped in a towel is best), firmly bandaged over the uterus, will effect this; and by its pressure upon the abdominal circulation, appears also to relieve the distressing cerebral symptoms. In six or eight hours the plug should be removed, the vagina well syringed with tepid or cold decoctum quercus c. alumine, and a fresh plug introduced, for precaution's sake.

As soon as the violence of the attack is over, and the immediate danger past, it will be necessary to administer those remedies which, from their astringent effects, have been called *Styptics*. Of these, matico, diacetate of lead, gallic acid, tannin, and the tincture of the sesquichloride of iron are the most worthy of notice. The matico, belonging to a plant of the pepper genus, is remarkable not only for being a powerful styptic, but also a warm and grateful stimulant, which renders it peculiarly valuable in such cases. The infusion is borne more readily by the stomach than perhaps any other remedy of this class; and I have good reason to consider the combination of an alcoholic extract of matico with diacetate of lead as probably the most powerful styptic which can be administered internally.

In proportion as our apprehensions of a relapse subside, so will it be desirable to discontinue these remedies, and have recourse to the other milder ones which I have mentioned. So long as the patient has difficulty in taking fluid medicines, the gallic acid and tannin may be given

separately or combined; but as soon as the stomach will bear an ordinary draught, I greatly prefer them as they occur naturally in the infusion of red bark (*cinchona oblongifolia*) combined with sulphuric or nitro-muriatic acid. Its astringent properties are far superior to the two other forms of *cinchona* in common use.

Attention must be paid to the bowels—a mild pill of equal parts of pil. hydrarg., extr. coloc. comp., and extr. hyoscyami, will probably be quite sufficient, especially if assisted with a small tepid enema. Diarrhoea is very apt to be induced in these cases, and must by all means be avoided. The food must be nutritious, and easily digestible: chicken panado, minced mutton, with mutton broth, beef-tea or milk for her drink, and if she wishes it, a little wine occasionally.

The menorrhagia from displacement is solely owing to the obstruction which is thus produced to the circulation returning from the uterus.

The commonest species—viz., prolapsus—exhibits the effects of this cause in their simplest form; the uterus descends, the vessels are partially strangulated; it therefore becomes distended with blood, and proportionably prone to hemorrhage. Replacing the uterus quickly diminishes its hardness and size, and effectually controls the discharge.—For the further details I must refer to the chapter on Prolapsus.

Where menorrhagia arises from retroversion, the cause is more apt to be overlooked; but the sacral pain, aggravated by exercise, standing, and constipation, and *not* relieved by the recumbent posture, unless in the prone position, ought always to excite suspicions as to the nature of the case, and point out the necessity of making an examination. It must, however, be borne in mind, that as retroversion in a woman who is not pregnant is very frequently produced by a loaded state of the bowels, it does not follow, because retroversion is present in a case of menorrhagia, that it has caused the discharge, as it is more than probable that this displacement, as well as the menorrhagia, is an effect of the unhealthy condition of the bowels.

My own observations lead me to the conclusion that a much greater degree of swelling of the lower half of the uterus occurs in that form of retroversion where the upper half of the organ is bent backwards upon the lower half; and where the os and cervix, beyond being pushed somewhat forward by the fundus behind, do not undergo any appreciable displacement. If it be necessary to distinguish these modifications by separate names, the term *retroflexion*, as proposed, applies properly enough to this retorted or bent condition of the uterus. The os and cervix are usually very much engorged and swollen, from the obstruction to the circulation returning from these parts, so that in some cases their characteristic form is entirely lost in the large irregular tumor, which, to a cursory observer may even be mistaken for a malignant polypoid growth. Under the commoner form of retroversion, where the os is turned more forwards, and the uterus not doubled sharply on itself, but merely bent backwards, the obstruction to the returning circulation is evidently less, as is seen from the size and shape of the os and cervix being but little altered; still, however, we almost always find that the globular tumor which the fundus forms behind the vagina is extremely tender to the touch, and betrays a degree of hardness which the fundus in the natural state cannot be supposed to possess; so that with these data I am inclined to the opinion that menorrhagia is more liable to be severe in retroflexion than in retroversion. The question, however, is of no great importance in a practical point of view, and therefore demands no further notice here.

The non-malignant, as well as the malignant diseases of the uterus, are liable to be attended with menorrhagia. It is in certain forms of fibrous tumor of the uterus where it attains its greatest profuseness, producing alarming exhaustion. Menorrhagia, however, is not a necessary result of fibrous tumor, as many cases of this disease occur where the catamenia have continued perfectly regular in time and natural in quantity, although the mass has attained a very considerable size, whereas in other cases the discharge has been even scanty, and occurring only

at distant intervals. The profuseness of the menorrhagia is in no wise proportioned to the size of the tumor, but rather the contrary, inasmuch as I have usually observed it to be most profuse in cases where the tumor, although perfectly distinguishable by internal examination, is not of a sufficient size to have excited the patient's notice, beyond that the abdomen had felt somewhat larger and fuller than usual. These tumors are usually more or less globular, or composed of several nodules united together. They are hard, and therefore capable of seriously obstructing the returning uterine circulation, when they happen to press on any of the large venous trunks. Experience also tells us that this form of fibrous tumor is very isolated, and has but slight and partial connection with the surrounding uterine tissue; it may, therefore, be fairly inferred that in some cases they produce hemorrhage, by causing great distension and enlargement of the uterine cavity—much in the same way that the presence of blood or coagula in the uterus is known to keep up hemorrhage after labor.

It is of the more importance to bear in mind the possibility of a small-sized fibrous tumor existing, in cases of menorrhagia which we have been unable satisfactorily to refer to any of the causes already mentioned, and which have resisted the treatment that had been adopted, because, although she may have been seriously reduced by continual losses, and thereby rendered not only pale but even cadaverous in her looks, still she does not present that sallow chlorotic cachectic appearance which stamps the presence of malignant disease. At the same time there are a number of symptoms which give the suspicion that it is more than a mere case of menorrhagia from general derangement of health. Symptoms indicating pressure in the pelvis may usually be detected; the bladder or the rectum suffer inconvenience; she has aching, gnawing pain of the pelvis, both behind and in front, occasionally extending down the thigh, with numbness or swelling; the pain, moreover, is seldom relieved by lying down. Under these doubtful circumstances an internal examination is of great importance; and if the

lower part of the uterus be not sufficiently altered in shape, size, and hardness, to render the nature of the case evident, the uterine sound, by passing beyond the ordinary distance, will clear up all doubts, not unfrequently even where the patient has had no suspicion of her complaint.

For the treatment, I must refer to the chapter on Fibrous Tumor.

The early commencement of malignant disease is so obscure, especially when affecting an internal organ like the uterus, that it is exceedingly difficult to investigate those conditions of the system which more immediately precede, or lead to it; but, from the cases of malignant uterine disease which I have had the opportunity of watching, if not from their commencement, at least from a very early state of their existence, I should say that the conditions of the system, which usually precede the formation of malignant disease, consist, *firstly*, of long-standing, gradually increasing, chylopoietic derangement, and mal-assimilation; *secondly*, consequent impurity of circulation; *thirdly*, congestion of the uterus, more especially of its lower portion (os and cervix); *fourthly*, induration and gradual alteration of structure, in which the disease essentially consists. Hence, therefore, it will be seen that the two first links in this chain of morbid processes are conditions which I have already treated of as so many causes of menorrhagia.

I scarcely need to remark, that the foregoing observations refer only to the menorrhagia which is so frequently seen to precede the formation of malignant uterine disease: I do not, of course, refer to those attacks of hemorrhage which occur in the second, or destructive stage, from the spreading of exuding ulceration, or the formation of fungoid growths.

The frequent connection of menorrhagia with malignant disease, as a very early precursory symptom, is of great importance, because, in many instances, the case is still within the reach of treatment, no permanent alteration of structure having taken place. The chain of symptoms which extend from mere derangement to the

actual establishment of disease, are those of torpid chylipoietic function; passive congestion of the pelvic circulation, and ultimately gradual swelling, hardness and tenderness of the uterus itself. The patient is pale and sallow, the excretions are morbid, and the action of medicine frequently shows the existence of large accumulations of unhealthy fecal matter. The chief local symptoms are the sense of weight, pressure, and fulness about the pelvis; hemorrhoidal congestion, and more or less bearing down, which is much increased by the upright posture, exercise, constipation, or the approach of a catamenial period; under which circumstances she will be aware of those peculiar darting pains, which at a later period, when disease is established, form so characteristic a feature in her sufferings. If the os and cervix be tender, she will have pain on sitting down upon a hard seat, and on the passage of solid feces, and other symptoms of a similar character which are especially observed where these parts are inflamed; they are not, however, necessarily present in all cases of incipient malignant disease, although there is no doubt that they may be detected in a considerable majority. The menorrhagia itself varies considerably; the discharge usually comes and goes with greater irregularity than in the forms I have already noticed; and, although sometimes profuse to an enormous extent, on the whole it appears more frequently in moderate quantity, fluctuating with short intermissions, or never entirely ceasing.

Upon examination per vaginam, the os uteri is usually found open, firm, and hard, but not necessarily tender; the uterus itself evidently enlarged, bulging out immediately above the cervix, and not so movable as it is when in a healthy state. Although the os uteri externum is commonly sufficiently open to admit the tip of the finger, the uterine sound will seldom pass the os uteri internum, or only with much difficulty; and this I hold to be a suspicious fact, as regards the nature of the case. In some instances there is little tenderness of the os, cervix, and lower portion of the uterus; but in others

all these parts are acutely painful on the slightest touch, showing that inflammatory action is present.

For the treatment of menorrhagia arising from these various conditions, as also in connection with ulceration of the os uteri, displacement and polypus of the uterus, of all which it must be looked upon as a mere *occasional* symptom, and therefore an uncertain one, I must refer to the chapters on these subjects.

CHAPTER IV.

UTERINE AND VAGINAL DISCHARGES.

I AM unwilling to deviate from the usual plan of treating this subject, still more to attempt to strike out a new path in opposition to the views of previous authors or of those of the present day. I cannot, however, look upon any of the various forms of what is commonly called leucorrhœa, as so many distinct affections, but merely as the symptoms and effects of certain morbid conditions of the uterus and vagina.

To consider leucorrhœa, *per se*, as a peculiar disorder or disease, requiring its specific treatment, appears to be as unpractical and erroneous as it would be to treat of an affection called *expectoration*. The one is as much the symptom and effect of certain morbid conditions as the other, and the varieties of the one are so many adjuncts to diagnosis and guides to treatment in uterine and vaginal affections, as those of the other are in pulmonary ones. It would be as mischievous and unpractical to treat the one as a distinct affection as it would be the other; and there can be no doubt but this very mistake has been a fruitful source of much erroneous practice.

Although, for the above mentioned reasons, I cannot acknowledge the correctness of treating leucorrhœa as a separate and distinct affection, it will be just as necessary

that the reader should be as conversant with those different forms of vaginal and uterine discharge which have been brought under that head, and with the various disorders and diseases of which they are so many symptoms and effects. I therefore propose to devote this chapter to a short description of these discharges, as they ordinarily occur to the unassisted eye of the practical medical man, reserving a fuller consideration of some to when I treat of those diseases to which they especially belong.

Much attention has been lately paid to microscopic examination with high powers, not only of these discharges, but also of the surfaces which are supposed to secrete them, and many interesting facts have been elicited in the minute pathology of this subject. It remains, however, to be seen how far the results of these researches will prove available in a practical point of view. I cannot help thinking that a considerable time, and a far more extended series of observations, will yet be required, before the various and varying appearances disclosed by the microscope in these discharges can be properly arranged, and thereby understood. I am very far from undervaluing, and still further from wishing to discourage the labors of the microscopic observer in investigating this subject; but these discharges are so mixed up with each other, so modified by accidental circumstances, as access of air, rest, or motion, arterial or venous congestion, &c., that it is impossible to use them, even as diagnostic evidences of the derangements of which they are merely local symptoms. In inflammation, ulceration, &c., of the fauces, we do not require a microscopic investigation either of the diseased surface or of its secretions; neither should we consider a minute knowledge of the structure and arrangement of its epithelial covering, of the papillæ on its surface, or of the manner in which its minute bloodvessels are looped, essential to our diagnosis of the case. If we detected a slight epithelial abrasion on the tonsil or neighboring part, we should be satisfied with our unassisted ocular inspection, without ascertaining whether the surface secreted pus or muco-pus globules, or whether it was

throwing off a quantity of epithelial scales blended with, or suspended in, mucous plasma.

It is highly interesting to investigate these minute changes which the microscope discloses; but in the present case, our observations are necessarily confined to the appearances presented by the various forms of discharge. The microscopic examination of the surfaces from which they are supposed to proceed can scarcely be rendered available for practical purposes. As, in the first place, it cannot be made during the life of the patient, and when the secretion is actually going on; and secondly, as it can only be made after death, the changes which are thereby produced will be sufficient to seriously modify the results.

Interesting as these minute and elaborate investigations undoubtedly are, I cannot help thinking, that when the results are confidently enunciated as the essential part of our knowledge on these subjects, to the almost entire exclusion of those general derangements on which they so especially depend, they unavoidably tend not only to narrow the views of the practitioner, and to divert his attention from those morbid conditions of the system, of which, as I have before said, they are but the local effects and symptoms, but also to confine his treatment to those local means which have latterly been so much overrated and abused. After a careful, and I hope unbiassed consideration, of the appearances which the microscope discloses in uterine and vaginal discharges, whether of these fluids themselves, or of the surfaces from which they are supposed to issue, I would ask what *practical* laws can we deduce from them? What well-established facts have we gained which the practitioner can turn to account in his treatment of these discharges? It behoves the microscopist to be careful that the really useful facts are not lost sight of in the confused multitude of minute observations, lest the treatment be restricted within the same narrow limits as the pathology of the disease.

But although I am anxious to point out the fact, that in the present state of our knowledge we cannot turn the

results of microscopic research in these affections to such practical and useful account as could be wished, it would be in the highest degree unjust to throw aside as valueless a quantity of interesting information on these subjects which has been collected with great care, or to refuse gratefully to acknowledge the extensive and elaborate investigations of Dr. Tyler Smith and his able coadjutors. The addition of such facts can never be without their value, and it is only by the continuance of such researches, and by the multiplication of the facts they record, that we can hope ultimately to establish such laws and general principles as shall be available in actual practice.

We are indebted to Mr. Whitehead, of Manchester, in his valuable work on "Abortion and Sterility," for having first pointed out in this country the interesting fact, that the ordinary secretion of the vagina is acid, while that of the cervical canal shows an alkaline reaction. "The mucous membrane of the vagina, in its normal state, always exhibits acid properties; that of the uterus is as constantly alkaline. In no instance have I found the secretion of the vaginal mucous surface produce an alkaline reaction, except in gonorrhœal affections, and in inflammation from other causes, resulting in the secretion of pus. On the other hand, the discharges from the interior of the uterus, whether diseased or healthy, with the exception of those of an ichorous nature, have been in every instance, where I have had an opportunity of testing them, invariably alkaline." (*Opus cit.*, p. 19.) This has been confirmed by the researches of Dr. Tyler Smith, on the same subject, and both of these observers have correctly shown that some of the appearances which these discharges present are evidently due to the action of the acid vaginal secretion upon them producing a slight amount of coagulation. "The different chemical conditions of the uterine and vaginal secretions are of considerable importance; for it will be seen that some of the most puzzling circumstances relating to the discharges in leucorrhœa have been caused by these conditions." (*The*

Pathology and Treatment of Leucorrhœa, by W. Tyler Smith, M. D., p. 34.)

These facts undoubtedly open to us a field of most interesting research, which promises valuable results in a practical point of view. The connection between the acidity of the vagina and certain states of the general health can be ascertained with nearly as much ease and certainty as that of the mouth and of the urine; although I cannot help thinking that this last—the acidity of the urine—bears, so close a relation to the acidity of the vagina as to enable us safely to infer the state of one secretion from that of the other. I have long been aware of the close connection between the condition of the urine and some of the other forms of uterine and vaginal discharges, but still look upon them as local symptoms, and effects of general derangement, modified by the peculiarities of the specific organ which may manifest them.

In the following remarks on some of the more common and well-known uterine and vaginal discharges, I have described them as they appear to the unassisted eye, and therefore with the characters which they ordinarily present, and by which they are most familiar to the practitioner. It must, however, be borne in mind, that they will differ considerably in the same individual, and almost from day to day, evidently depending, in great measure, on changes connected with various states of the general health. Although I have prefixed the term “uterine and vaginal discharges” to this chapter, I nevertheless, in the words of Sir Charles M. Clarke, wish “it to be considered as a symptom, and not treated as a disease.” (Vol. i. p. 33, 3d ed.). Indeed, the appearance of the same discharge at different times is so modified by a variety of circumstances, that it is occasionally difficult to decide upon the nature of it without first satisfying ourselves as to the characters of the attendant symptoms. Except perhaps, in the common form of simple leucorrhœa, these discharges, moreover, are seldom found pure and unmixed, but almost always consisted of secretions from two or three different parts, and more or less chemically, as well as mechanically, altered during their descent towards the

os externum. In the ordinary course of medical practice, I therefore conceive it impossible to derive much information in a diagnostic point of view, by a microscopic examination of these discharges when capable of being collected for that purpose.

I propose to consider this subject under two heads.

1st. Vaginal and uterine discharges, connected with functional derangement.

2d. Vaginal and uterine discharges, arising from organic disease.

Of these, the first will chiefly demand a separate consideration. Those of the other class are so essentially the symptoms and results of distinct affections, that any notice beyond the present description must be delayed until I treat of the diseases themselves.

The simplest form of vaginal discharge, arising from functional derangement, is that which has been called of late years *simple leucorrhœa*. Whether any of its many other denominations so distinctly indicate this precise form, may be a matter of doubt, as they, like the term "*leucorrhœa*," have been vaguely applied to almost every species of discharge (except the sanguineous ones) which issues from the os externum. It is "the transparent mucous discharge" of Sir Charles M. Clarke. It is, in fact, nothing but the ordinary mucous secretion of the vagina abnormally increased. In its purest form it is chiefly or solely a result of a relaxed condition of the vagina; and, under these circumstances, the only change which it undergoes from the natural state is, that in proportion as the secretion increases in quantity, so does it become more watery.

"If the vessels of the uterus and the vagina are injected by colored wax thrown into the hypogastric arteries, several vessels of a considerable size may be seen running from the hypogastric arteries along the sides of the vagina towards the os externum; and partly by these vessels, and partly by some branches of the pudic artery, this secretion is performed. When the muscular fibres which surround the vagina contract, the small branches of these vessels will be pressed upon, and their diameter

will be diminished: in consequence of this diminution of their diameter, the stream in them will be lessened, and less blood will be sent to the parts which they supply; but if the power of contraction in the muscular fibres surrounding the vagina be lessened or lost, then, no restraint being laid upon the vessels, more blood rushes through them, their diameter being increased, and the parts to which they go will be supplied more plentifully. So, likewise, if the canal is very much dilated by any cause, the muscular band being put upon the stretch, will be unable to act at all, and a like effect will be produced upon the bloodvessels which furnish fluids for secretion. In moist countries and climates, where it is to be expected that the tone of the body would be diminished, this discharge is found to be very profuse." (Sir C. M. Clarke, *op. cit.*, p. 23, 3d edit.)

The corrugation of the mucous lining of the vagina depends on the amount of tonic contraction which its muscular coat is capable of exerting, and is therefore a fair test of the state of the patient's general health. If she be strong and in robust health, the canal is well contracted, the corrugation of the lining membrane is well marked, the rugæ numerous, and the secretion just sufficient to preserve the natural moisture of the canal; but if, from any depressing cause, the muscular coat has lost tone, and its power of contraction been weakened, the rugæ disappear, the canal becomes relaxed and flabby, and pours out an abundant watery secretion, which weakens the patient still further.

Derangement of the digestive organs is perhaps the most frequent cause of that loss of tone and general debility upon which simple leucorrhœa so essentially depends: the muscles lose their power, the limbs ache, and fatigue is induced by the slightest exertion; the skin is flabby and relaxed, and is either dry and rough, from want of due activity in its capillary circulation, or pours out a profuse perspiration, which, from not being produced by that degree of exertion which is requisite for its secretion in a state of health, is accompanied by a cold clammy state of surface.

This atonic condition of the uterine system not only directly weakens the patient, by the loss which is constantly going on, and not unfrequently also by a disposition to passive menorrhagia, but it reacts on the digestive organs, and tends still further to reduce their tone and increase their derangement.

Another modification of this cause is constipation, which not only tends by pressure to obstruct the returning circulation, and thus increase the passive engorgement of the uterine system, but also, by the weight of the loaded intestines, to force down the uterus and dilate still further the already relaxed vagina. Besides the well-known appearance of general debility, and moral as well as physical depression, the patient has many of the early symptoms of incipient prolapsus, as pain of back on standing or walking, &c.

The causes of simple leucorrhœa are all those which produce an atonic state of the vagina: dyspepsia and every derangement of the chylopoietic viscera, profuse menstruation, rapidly succeeding pregnancies, frequent abortions, and the debility produced by severe uterine hemorrhages, either in labor at the full term, or in abortion—suckling where there is not sufficient strength of the system to bear it—late hours, hot rooms, impure air, indolence, luxurious habits, over-fatigue, and the various depressing passions of the mind.

The indications of treatment will be to remove obstructions to the returning circulation of the uterine system, from torpid liver, constipation, &c., by alteratives and tonic laxatives; and to give tonic medicines of such a character as shall most effectually restore the tone of the general system, and induce such an amount of vaginal contraction as shall check the superabundant discharge.

Besides a few five-grain doses of blue pill, the combination of ferri and magnesiæ sulph., with a little sulph. acid in excess, is well adapted for a morning laxative in these cases, and not only effectually clears the bowels, without weakening the patient, but reduces the large, flabby abdomen. After this she should take, three times

a day, some nitro-muriatic or sulphuric acid in infusion of red bark (*cinchona oblongifolia*). I know of no astringent tonic so powerful as the recent infusion of this species of bark; and if the liver has been previously well roused to active secretion and the bowels effectually cleared, a rapid improvement not only of her general health, but also as regards the diminished leucorrhœa, will soon be evident.

In aid of the above treatment, a pure, bracing air, cold bathing, early hours, simple nourishing food, and agreeable occupation, will be of great assistance.

Local remedies, viz., astringent injections, are seldom necessary in simple leucorrhœa, or, if necessary, are so only for a short time, as the general and local debility of which the discharge is a mere symptom quickly yields to the above-mentioned constitutional treatment. If, however, she has suffered much pain of back from standing, and even threatening of prolapsus, where the discharge has followed labor or an abortion, the local treatment for this condition will be required.

*Albuminous "White Mucous," or White Creamy Discharge.
The Discharge in Inflammation of the Cervix Uteri.*

We are indebted to Sir Charles M. Clarke for having first pointed out the connection between what he has called "the white mucous discharge," and inflammation of the cervix uteri. He describes this discharge as "opaque, of a perfectly white color; it resembles in consistence a mixture of starch and water made without heat, or thin cream; it is easily washed from the finger after an examination; and it is capable of being diffused through water, rendering it turbid." "In many instances the white mucous discharge is much thicker than cream, having the tenacity of glue; and perhaps this is the state in which it comes away from the cervix uteri. This appearance corresponds with that of the mucus which is separated from the cervix uteri at the commencement of labor." (Vol. ii. p. 7.) The speculum has strikingly confirmed this view, for when seen at the upper part of the

vagina, or as it flows from the os uteri itself, it has quite the appearance of white of egg, hence the denomination of "white albuminous vaginal discharge," which is frequently applied to it. As it passes down the vagina it becomes mixed with the acid secretion of that canal, it assumes an opalescent appearance, and as the coagulation is gradually perfected it appears at the os externum—the well-known "white creamy discharge." How far the secretion of this peculiar form of discharge is limited to the cervix uteri in a state of inflammation, as Sir Charles M. Clarke supposes, is perhaps rather doubtful. It evidently oozes from the os uteri, and where the cervix presents distinct symptoms of inflammation, we may safely infer that it is furnished by the membrane which lines the canal; but at other times it appears to come from a higher source, for in cases where chronic inflammation of the uterus has been set up by previous abortion, &c., and want of proper care afterwards, an exactly similar albuminous discharge is seen to issue from the os uteri. The speculum is of great value, as far as it enables us to see this source of the discharge, and its exact appearance at the moment of entering the vagina; but the uterine sound will also be of essential service in ascertaining the precise state of the cavity of the uterus, and the connection of the discharge therewith.

"The investigation of the discharge must be made when the patient has remained quiet for some time, in order to draw a just conclusion from the appearances; for it is observed that even the *transparent* mucus of the vagina, when secreted in sufficient quantity to run down over the labia (which have some motion upon each other in the act of walking), becomes also opaque and white. This change is attributable to the entanglement of air with the mucus." (*Op. cit.*, vol. ii. p. 6.)

A white mucous discharge is also seen in patients of a rheumatic or rheumatic-gouty habit, and appears to be somewhat of the same character as that I have now described, viz., the ordinary vaginal secretion mixed up with minute bubbles of air. This may, in part, arise from the swollen, puffy condition of the vagina in these cases, but

it is also more or less attributable to that secretion of gas which is known to take place from mucous surfaces under these circumstances.

The leucorrhœa, which is frequently observed during pregnancy, is merely an increase of the ordinary vaginal secretion, arising from the vascular activity which now exists in these organs, and is frequently a natural relief to the overloaded vessels; hence it is why local remedies in such cases are, at least, of very doubtful benefit, and not unfrequently positively mischievous. It will be much better to rouse the activity of the liver and bowels, and thus, by relieving the abdominal circulation and lessening congestion, to control the discharge.

Purulent discharge from the vagina occurs under various circumstances. The discharge of pure pus is chiefly or only seen in connection with abscess, or in the second stage of acute inflammation of the vagina, excluding, of course, from consideration, gonorrhœal and all other venereal affections. In a modified form, that is, more or less mixed with the mucous secretion of the vagina, or with the white, creamy, or albuminous discharge, it occurs as a result of ulceration of the os and cervix uteri, or of vaginal irritation arising from a polypus or other morbid growths, the presence of foreign bodies, as pessaries, &c., and the irritation arising from ascarides in the rectum.

The different appearances of the discharge in acute inflammation of the vagina (*vaginitis*) are well worthy of attention. In the earliest stage of the affection, the mucous secretion appears to be suppressed; the canal is dry, intensely hot, somewhat swollen, and exquisitely tender. A profuse, watery, serous discharge breaks forth; the mucous membrane becomes much more swollen; the discharge gradually assumes a purulent character, until it appears to consist of little else than pure pus. As the inflammatory part of the attack subsides, it becomes more and more muco-purulent, until at length the pus disappears altogether, leaving the ordinary vaginal mucous discharge more or less modified by the previous process, and gradually returning to the natural state, as health is restored.

Whether purulent matter is secreted in malignant diseases of the uterus or vagina, is, I think, very doubtful; the prevailing character of the discharge in these affections is watery; and if it be occasionally thick, there is nothing purulent in the appearance of it.

Of the organic diseases, the fibrous tumor affords a secretion which more nearly resembles the white creamy, or albuminous discharge which I have already described, than any other. Although white and albuminous looking, it nevertheless may be distinguished from the discharge of an inflamed cervix by an attentive observer. It has neither the transparent appearance, like white of egg, nor the smooth, creamy consistence which this discharge presents at different times; but it has a somewhat coagulated appearance, like broken curds of thin milk. It does not smear the finger, or sound in the adhesive glue-like manner, as pointed out by Sir Charles M. Clarke in his description of the white creamy discharge, but more in the manner of tenacious mucus, allowing itself to be drawn out to some length before it quits its hold; neither is it miscible with water. The discharge in cases of fibrous tumor is *solely* from the uterine cavity; it is seldom in any quantity, and is frequently so scanty as scarcely to attract the patient's attention. On examination with the speculum it is in general found adhering to the os uteri and upper part of the vagina, and the sound, when passed into the uterine cavity, returns covered with it, thus showing that the coagulated curd-like appearance in this case is not attributable to the chemical action of the acid secretion of the vagina, but that it presents these characters before it has escaped from the uterus.

The watery discharge in its present state is seen in that form of epithelial cancer which occurs as an outgrowth from the os uteri, and constitutes the cauliflower excrescence of Sir Charles M. Clarke; it rarely presents any modification of appearance, beyond an occasional tinge from blood. It oozes from the delicate membranes of this vascular growth, and its source is strictly confined to this part. The only other discharge of clear watery

fluid is in the case of uterine hydatids, the result of a dropsical ovum; but the entirely different circumstances under which this discharge appears, viz., the previous symptoms of pregnancy, and coming in little sudden gushes from the occasional rupture of these hydatids, would almost enable us to form a diagnosis even without the aid of an examination, not to mention the size of the uterus as felt through the abdomen, and the process of expulsion which sooner or later follows.

Another and very rare form of watery discharge, is that which is secreted from the cavity of the uterus itself, and either coming away in a continued flow, or distending the uterus by its accumulation from time to time, and discharged by a sudden gush of a large quantity. (*Med. Times*, Aug. 2, 1845.) It would appear to be connected with a feeble atonic state of health, and to be relieved by rousing the activity of the chylopoietic viscera, and improving the strength of the patient.

The watery discharge connected with malignant disease presents very different characters to those which I have just described. Even when clearest, it has a yellowish tinge not seen in the others, which are rather inclined to an opalescent hue; it stains the patient's linen of a dirty-brown color, which, as it dries, becomes darker at the edge, and stiffens it as if it had been starched. With ordinary attention to cleanliness, the other forms of watery discharge are inodorous, or nearly so, but that which arises from malignant disease is invariably accompanied, sooner or later, with a peculiar odor, which gradually becomes excessively offensive. As the disease approaches the second or ulcerating stage, the discharge is mixed with blood, unhealthy pus and mucus, shreds of lymph, and portions of disorganized half-macerated tissue; it becomes highly acrid, inducing great heat, redness and irritation of the external parts, and wherever a breach of surface has occurred, it has appeared to me, in many instances, capable of inoculating the part with the same malignant disease as that from which it proceeds. The stench becomes more intolerable, in spite of the aids and appliances for maintaining

perfect cleanliness which wealth and luxury can supply. Not unfrequently the patient's discomforts and sufferings are still further aggravated by the disease making its way into the bladder or rectum, and thus establishing a communication with these organs, by which the feces and urine pass into the vagina.

The varieties which the watery discharge presents in the malignant diseases which are commonly known to attack the uterus, are not sufficient to afford any diagnostic characters. In the commonest form of cancer, viz., the cephaloma, or medullary sarcoma, especially if during its further progress it assumes the fungoid or polypoid form, the discharge is frequently mixed, from time to time, with portions of the brain-like matter of which the disease consists, and these are easily detached, either by the finger during examination, or by the patient's movements. When the disease passes into the condition of fungus hæmatodes, the discharge is generally mixed with blood, and at times is little else than profuse hemorrhage.

CHAPTER V.

INFLAMMATION OF THE OS AND CERVIX UTERI.

IN treating the subject of inflammation of the os and cervix uteri, I must beg it to be remembered that I do not feel justified in looking upon it commonly as a primary idiopathic disease, but rather as one which is of a secondary character; or, in other words, symptomatic of some cause, the presence of which has induced it. I can no more look upon inflammation of the os and cervix uteri as a primary disease, causing derangement of the general health, &c., than I could on a gouty toe, a rheumatic knee-joint, or enlarged strumous gland. Most of these uterine affections are the local manifestations of some general derangement, but which, in their turn, re-

act as causes, producing their own set of sympathies and effects.

The female generative organs, situated at the lower part of the trunk, supporting the chief weight and pressure of the intestines, and subject to such great periodic alterations of vascularity, not to mention the wonderful changes they undergo during pregnancy and parturition, are rendered peculiarly disposed to be affected by any morbid action which may occur, especially in the great machinery of the chylopoietic system, and liable to be fixed upon in the various blood diseases, on which to localize their energy and expend their virulence.

It will therefore be seen that there are few affections of the general health in a female, in which the generative system is not more or less evolved; and although these local affections, which in the first instance are mostly effects of deranged health, react and produce in their turn considerable sympathetic derangement, yet it must be borne in mind that, unless a distinct local cause be present, they must be looked upon as "the local manifestations of a general derangement," in order that we may form correct and rational ideas respecting their nature and treatment.

I cannot understand upon what grounds it can be justifiably asserted that the uterine organs follow a different law in this respect to any other organ or part of the body. If we take the various morbid appearances which the mouth presents, as regards the tongue, fauces, tonsils, &c., we do not usually look upon these as purely local affections, producing symptomatic derangement, but as the local effects and evidences of a general condition of health, and should condemn the treatment which advocates mere local applications, as highly empirical and unscientific.

Inflammation of the os and cervix uteri seldom occurs as an acute affection, but, in far the majority of cases, in a subacute or chronic form. It is marked by continued aching pain about the lower part of the pelvis, extending to the back, and much increased by the erect posture and exercise, and especially aggravated by sexual intercourse,

by sitting down suddenly on a hard seat, or by the passage of scybalous feces. It is usually attended with a sense of heat, weight, and throbbing, and with more or less irritability of the bladder. At first the pain is not constant, but is allayed by rest, so that she is perfectly easy in the recumbent posture; but by degrees it scarcely ever leaves her, and she gradually becomes aware of sharp, darting pains, like a sudden prick or stab, flying through the pelvis from time to time.

A white creamy discharge from the vagina accompanies this affection, and, as we have already mentioned, was first pointed out by Sir C. M. Clarke, as diagnostic of inflammation of the cervix uteri. "It is opaque, of a perfectly white color; it resembles in consistence a mixture of starch and water made without heat, or thin cream; it is easily washed from the finger after an examination; and is capable of being diffused through water, rendering it turbid."¹

On examination per vaginam, the os uteri is generally felt lower in the pelvis than natural—sometimes so low as nearly to rest upon the perineum; it is swollen, and more or less open. The mucous membrane, covering the cervix, feels soft to the finger, but the glandular tissue of the cervix beneath is hard and very sensitive. In the early stage it is usually increased both in length as well as thickness; the part feels hotter than natural, and frequently throbs from increased vascularity. The lower segment of the uterus is also more or less swollen and hard, but this is probably rather to be attributed to the slight descent of the organ than to the inflamed condition of the cervix. The slightest touch causes severe pain, darting into the back, and sometimes continuing for several hours afterwards. Seen through the speculum, the os appears swollen, its lips cushiony, and of a dark red color, which extends into the cervical canal. If the disease be already of some standing, and assuming, therefore, the chronic form, the swelling is generally less

¹ On the Diseases of Females, Part 2, p. 37.

marked, but the lips more everted, the cervix thicker and shorter, from the increased size of the uterus; the color is also less uniform, being mottled with patches of vascularity. "These patches have a raw appearance, and have been described as ulcerations, though in reality no abrasion or break of surface is to be found."¹

Inflammation of the cervix uteri is usually associated with considerable derangement of the digestive organs, and by an atonic condition of the system generally. The face is pale, or perhaps sallow, the pulse feeble and irritable; the tongue pale and flabby, or red, dry, and rough, from the presence of uterine irritation, the vital powers depressed.

"This disease," says Sir C. M. Clarke, "occurs frequently in those habits in which the blood is distributed through the different parts of the body very unequally; and in such cases, it will generally be found that the system is unusually weak; there appears here to be a resemblance between inflammation of the cervix uteri, and those cases of inflammation of glands met with in different parts of the body, as in the neck, axillæ, the groins, and especially in the mesenteric glands of children."²

It is caused by whatever tends to produce or keep up uterine congestion. Constipated bowels or torpid liver are two of the most frequent constitutional causes of this affection. An intestinal canal loaded with bulky fecal accumulations, not only obstructs the circulation returning from the pelvic viscera, as is daily seen by its effects in producing an hæmorrhoidal habit, but by pushing the uterus lower down into the pelvis than is natural, its returning circulation becomes also impeded, and considerable engorgement of the organ is the result. Thus it will be easily understood how, in atonic habits, a slight degree of prolapsus uteri will frequently produce a congested state of the cervix, and hence it is that inflammation of the cervix often follows an abortion, especially if the patient has risen too soon after its occurrence. Weak-

¹ Dr. Snow Beck, *Med. Times*, Aug. 23, 1851.

² *Op. cit.*, p. 51.

ened by loss, she has not maintained the recumbent posture while the uterus was still large and heavy, and the soft parts too relaxed to give it the proper amount of support.

As in dysmenorrhœa, the local symptoms, whether uterine or ovarian, are sometimes a result of an impure or unhealthy condition of the circulation, so here we occasionally meet with inflammation of the cervix, as the local manifestation of a constitutional cause, resisting ordinary treatment, although fairly amenable to such as is indicated by the nature of the general affection.

Besides arising from general derangement of the system, and an impure condition of the circulation, inflammation of the cervix may be induced by causes of a more local character; thus, for instance, exposure to cold; but this is more liable to produce inflammation of the ovaries, especially if acting during a catamenial period. Violent horse-exercise, especially if from want of healthy tone the uterus has sunk a little lower into the pelvis than usual, inordinate sexual intercourse and improper irritation of the part. I must also add another cause which has existed during the last few years to a considerable extent, viz., the dishonest¹ application of caustic to the os uteri, at intervals so short as to render it impossible for the effects of the first application to have healed before the second was made, and continued at this rate for such a length of time as to set up severe irritation, and even produce very serious injury.

This form of inflammation of the cervix presents features which distinguish it from the ordinary species I have just described. It would, perhaps, be more correct to term it a highly irritable condition of the uterus,

¹ I am justified in using the word "*dishonest*." A large number of cases having come under my notice where severe uterine irritation had been produced, with chronic induration of the part, and serious injury of the general health, without the slightest evidence from the patient's history to have justified the use of caustic at all. In some cases which I have seen, only a few hours after the application, the os uteri was perfectly sound, except the ash-colored slough produced by the caustic.

which not only involves the ovaries, but frequently implicates the spinal cord to a serious extent, were it not for the alteration of structure and permanent injury of the part which has more immediately suffered from this treatment.

She complains of a constant pain in the uterine region, but generally more behind the symphysis pubis than is usually the case in ordinary inflammation of the cervix, extending from hip to hip, and, in aggravated cases, darting up the spine with neuralgic severity. It is increased by standing, or by any exercise whatever. Sitting down upon a hard seat, or the passage of solid feces through the rectum, produces great suffering, inasmuch as when once the pain is brought on, it will continue severely for some time after. The moment she assumes the erect posture, she has a sensation of weight, bearing-down, and burning heat in the pelvis, which are quickly followed by the pain itself. The catamenial periods usually follow each other too quickly, are almost always very profuse, and invariably attended with great suffering. If the ovaries are involved, the symptoms of ovarian dysmenorrhœa will also be present. She has a constant ichorous watery discharge, which is sometimes very profuse; the bowels are deranged, the urine thick; the tongue pale, dry, and rough, with red papillæ; the face is sallow and wan, the spirits depressed, the pulse feeble and very irritable; she has lost strength and flesh.

On examination per vaginam, this canal is found soaked in the thin watery discharge already mentioned. On gently touching the os and cervix uteri with the finger, the patient feels as if these parts were raw, from the aggravated sensibility which now exists; firmer pressure with the finger brings on the pain already described. The os uteri is usually swollen, uneven, and knobby; it is dragged forwards, or to one side, without any corresponding displacement of the organ itself. Whether this alteration of shape is owing to cicatrizations in the part itself or surrounding vagina, or whether it depends on different portions being affected with different degrees of induration, is not easy to determine; at any rate the

cervix has usually a stony degree of hardness, and the uterus above it feels large, hard, and tender to the touch.

Seen through the speculum, the os uteri does not present the dark red tinge, more or less mottled with patches of a brighter color, as in cases of ordinary inflammation; but it has a pale, ashy hue, much injected with vessels, just as is occasionally seen in the irritable throat and tonsils of an unhealthy person who has been suffering from repeated attacks of quinsy. The discharge is evidently uterine, and is constantly oozing from the os uteri in considerable quantities. If the uterine sound be passed, it generally penetrates half, or even a whole inch beyond the usual distance, showing that the uterine cavity is enlarged, and intense pain is produced the instant it touches the internal surface of the organ, indicating great irritability, and probably inflammation of its lining membrane.

Considering, with regard to treatment, the amount of general derangement of health which attends a case of ordinary inflammation of the os and cervix uteri, it is highly desirable to premise some doses of alterative and laxative medicine, and thus thoroughly to clear out the bowels, &c., before proceeding to any special local remedies. A dose of blue pill for two or three successive nights, and a brisk laxative the following mornings, frequently produce such a change in the general symptoms as to materially alter the severity of the uterine affection. By restoring the liver to a healthy action, and clearing the intestines of a large quantity of feculent matter, the abdominal circulation becomes greatly relieved, and local congestion proportionably diminished. Indeed, we can scarcely be said to have ascertained the real extent of the local affection until this treatment has been premised. If the os uteri still remains much congested, and of the dark red color already alluded to, it is better at once to scarify the part, as being the quickest and most effective mode of relieving the patient. The blood starts with the slightest touch of the scarifying lancet, and two or three ounces are quickly taken away, with immediate diminution of the symptoms. The horizontal position must be

strictly enforced, so as to give the empty vessels time and opportunity to recover their healthy tone.

If the disease has assumed more of the chronic character, and therefore the glandular tissue of the cervix be more involved, leeches are generally preferable, the mucous membrane of the os uteri not being sufficiently engorged to furnish the necessary quantity of blood by scarifying. When the bleeding has ceased, the vagina should be repeatedly washed out with a warm decoction of poppies, some of which should, if possible, be retained in the canal for a time, by the patient lying upon her back, with her knees drawn up.

Besides the alterative and laxative medicines which have been mentioned, she should take some alkaline mixture, to improve the state of the urine, which under these circumstances, is usually very acid, and thus prevent its irritating effects upon the bladder. No combination is better than small doses of the bicarbonate and nitrate of potass., and she may continue to use it after meals, even when she has commenced the use of mineral acids and tonics. The state of the liver and bowels should be closely watched, and the recumbent posture maintained for some little time. The nature of the constitutional symptoms will point out how far the alterative and tonic plan of treatment must be modified; but the general indications are to restore the digestive organs to a healthy condition, to relieve local congestion, and invigorate the system.

If the glandular tissue of the cervix be much implicated, the induration of the part very considerable, and the lancinating pains frequent and severe, the above treatment must be more or less modified; it is generally preferable in such cases to apply the leeches to the anus, not only to relieve the hemorrhoidal congestion which is usually present, but to avoid the irritation, and even slight inflammatory action which the bites are apt to produce. A suppository of diacetate of lead and conium is a useful application in these cases; and where the patient is very feeble and too much reduced to bear the leeches, becomes a valuable substitute for them.

This must also be, in a great measure, the character of the treatment in that form where the part has suffered from the improper use of caustic applications. The inflammation of the os and cervix uteri, in these cases, is seldom of such a nature as to require the application of leeches to the part itself; and the extreme irritation which they not unfrequently cause, contraindicates any other local applications but those of a soothing character; while the enfeebled state of the patient's health renders any depletion very questionable.

If there be much hemorrhoidal as well as uterine congestion, leeches occasionally to the anus will be justifiable, especially just before the menstrual periods; but, with this exception, the suppositories of diacetate of lead and conium, and the frequent use of the decoct. papaveris will form the chief local treatment.

The general treatment is by no means so simple or so easy as in the other case. The health has been so much deranged by the long-continued effects of severe uterine irritation, and the strength so broken down by frequent attacks of menorrhagia, and the profuse leucorrhœa during the intervals, that it is difficult to adopt any distinct line of treatment at first starting, beyond the attempt to regulate the liver and bowels by the mildest remedies, and soothe the irritable system by gentle sedatives. A course of taraxacum with decoct. sarzæ comp. and liq. calcis is valuable in the early stage of treatment, and it obviates the necessity of mercurial remedies, which are contraindicated by the irritability of the intestinal mucous membrane which frequently exists. It is of great importance to allay this condition as quickly as possible, not only because we thereby remove a fruitful source of uterine irritation, but because it also enables us to employ remedies which we could not otherwise do. When this has been arrested, we may generally pass at once to the use of mineral acids and tonics, and, if necessary, these will pave the way to a course of cod-liver oil. If the season of the year permit, a residence for some months at the seaside will be most desirable. She should use sea-

water in her morning ablutions; and if her health be sufficiently improved, and the weather warm enough, she may bathe with advantage.

CHAPTER VI.

ULCERATION OF THE OS AND CERVIX UTERI.

ULCERATION of the os and cervix uteri is an affection so closely allied to those which have formed the subjects of the previous chapters, more particularly to inflammation of the part, which, indeed, must always precede it, that it will demand a brief consideration here; the more so as it chiefly arises from, and is connected with, the same general derangements and constitutional affections as the others.¹

Ulceration of the os and cervix uteri (when unconnected with malignant disease) is a very simple affection of the mucous membrane covering those parts, and, like ulceration of the throat and tonsils, must rather be looked upon as a local result of constitutional derangement, and treated accordingly. Its presence can, doubtless, produce much irritation and corresponding local symptoms, as has also been shown to be the case with the affections I have described in the previous chapter; but to assert that it is a cause of general derangement in the system, and to propound the postulate (for I can call it nothing else) that it is a most frequent primary cause of impaired health in women, argues either a singular ignorance of the fundamental laws of pathology, or great indifference to truth in the attempt to propagate and maintain certain

¹ In the following observations I neither allude to the ulcerations produced by mechanical irritation, nor to those which are the result of syphilitic contamination. The one requiring the necessary moral restraint to effect the discontinuance of an improper habit; the others conventionally belonging to the province of my surgical brethren.

doctrines in justification of an improper and dishonest mode of treatment.

The subject of ulceration of the os and cervix uteri has been of late years exaggerated to a remarkable extent, both as regards its supposed frequency and its effects, and presents an instance of delusion as discreditable to the candor of a practitioner as to the common sense of his patients. It has been asserted that about nine out of ten patients owe their various symptoms to this cause; and to support such an assertion, every variety of appearance which the os uteri presents, as seen through a speculum, has been pronounced to be "ulceration," although, in reality, having nothing whatever to do with it; and numerous cases have come under my own personal knowledge where caustic has been even applied to a perfectly healthy os uteri, and the patient informed that she had "ulceration!"

Allowing for the difference of position, &c., I would say that the os uteri presents as great a variety and frequent change of appearance as the tongue and throat do; and I, moreover, feel convinced, that if these parts could be as readily inspected, experience would soon enable us to recognize the appearances which they present as indications of the state of the patient's health—much as we are accustomed to do in examining those presented by the tongue.

The word *ulceration* has been applied of late years by a certain class of uterine practitioners to every possible variety of appearance which the os uteri can present, although similar appearances in other parts would never be considered to come under this denomination. Dr. Snow Beck, in his masterly analysis of this so-called ulceration of the uterus (*Med. Times*, 1851, Sept. 13), points out the impropriety of thus applying the term ulceration to appearances which have nothing to do with this process, and which has been thus misapplied for the purpose of justifying the false assertion respecting the frequency of this affection, and the dishonest application of caustic where, in reality, it was unwarranted. "The morbid process," says Dr. Snow Beck, "by which a por-

tion of epithelium is separated from an inflamed mucous membrane, and an abrasion produced, is essentially different from that which causes a solution of continuity of the same part, or an ulceration. In the former, the epithelium is first raised by the effusion of a portion of serum beneath it, and afterwards separated; whilst in the latter it is a process of molecular gangrene, which induces a destruction of part of the membrane. To include these two distinct processes under one denomination appears irrational; and, certainly, such a method of procedure is contrary to every principle of pathology as at present established. To carry out this principle, simple catarrhal inflammation must be considered the same morbid process as gangrene, which cannot be admitted. Moreover, the pathological condition of the organ which is present and induces abrasion or excoriation, is essentially different from that which exists when ulceration is produced. Abrasion or excoriation usually accompanies inflammation of an active character, and requires to be treated by antiphlogistic means, in order to cure it, or it may form part of the morbid changes produced by a blood-disease, as in some of the exanthemata, and passes away when this constitutional condition is removed. It is far otherwise, however, with ulceration, which, when present, indicates a serious alteration in the circulation and nutrition of the part. It may be that the veins are enlarged and obstructed, that stagnation of the blood occurs, and ulceration is finally induced by molecular gangrene, similar, in point of fact, to that which occurs in the leg from varicose veins; or it may be the result of frequent attacks of inflammation occurring in an organ which remains enlarged, and consequent profound modification of the nutrition of the part. But whatever way it is caused, the treatment is essentially different from that of the former lesion; for here antiphlogistic measures are of little or no avail, whilst the local application of stimulants and of escharotics, as adjuncts to the general treatment, are the means of cure. Thus, whether the question be regarded in relation to the pathological process going on in the part, or with regard to the pathological condi-

tion of the organ which accompanies these processes, or in regard to the absolute alteration induced in the part, we arrive at the same conclusion, that abrasions or excoriations are not forms of ulceration, and ought not to be classed with it under the same denomination."

Ulceration of the os and cervix uteri, not connected with malignant disease of the uterus, is, in fact, a rare affection. It depends essentially upon passive congestion of the organ—as in prolapsus, and is especially observed after abortion, where the health has been much broken and the uterus has remained large and flabby, and where, from general debility and want of tone, it has continued lower in the pelvis than natural. In other cases, this congested state has evidently been produced by constipation, torpid liver, and other derangements of the chylopoietic viscera.

Whatever has been the cause, there is no doubt but that an ulceration once established on the most depending part of a uterus swollen from chronic engorgement, like that on a leg the veins of which are varicose, shows but little disposition to heal of itself, but produces considerable irritation of the organ, causing purulent discharge, and much pain of the back and hips, and many of the milder symptoms of inflammation of the cervix. Another and not uncommon result is menorrhagia, and occasionally more or less vesical or ovarian irritation.

The close sympathy which connects the uterus with the digestive organs, reacts upon them, and increases those derangements which were probably the original cause of the uterine affection. Hence, where it is possible, the local should commence soon after the general treatment in this class of cases, as there is no doubt but that the various derangements of the chylopoietic organs are thereby rendered more amenable to the remedies employed.

The symptoms of ulceration of the os and cervix are, at the best, vague and uncertain, unless aided by an examination with the speculum. They are usually those which arise from increased weight, tenderness, and irritability of the uterus. Thus, she has often pain of the

back and loins, much increased by the erect posture, by exercise and constipation, extending round the pelvis, with sense of bearing-down, internal heat, and frequent irritability of the bladder. She has occasionally pain on sitting down, and other symptoms, as in inflammation of the os and cervix; the catamenial periods are either too profuse, or are irregular and frequent, and during the intervals there is more or less muco-purulent discharge. The health begins to fail; she grows pale, sallow, and feeble, the digestive organs are deranged, and besides showing the usual appearances of this condition, the tongue has a rough, short-napped fur upon it, which is characteristic of co-existing irritation. On examination per vaginam, the os uteri is low in the pelvis, swollen, hard, and tender; the mucous membrane is soft, and thicker than ordinary, so that, as in an irritable breast, it is easy to distinguish the soft covering from the indurated glandular tissue beneath; the lower part of the uterus is harder, larger, and more tender than natural.

On inspection with the speculum, the os is seen more or less inflamed, exhibiting a portion varying in extent where the membrane has been destroyed, leaving irregular, but sharply defined edges, surrounding a depression which is filled with minute and angry granulations; the prominence of the edges, their color, as also that of the granulations, will greatly depend upon the state of the patient's health, and will no doubt vary from day to day.

The *general* treatment must be conducted on the same rules as in inflammation of the os and cervix uteri. If the part be much inflamed, a slight abstraction of blood by scarifying, or by leeches to the anus, will be desirable, and in these cases a suppository of diacetate of lead and conium will afterwards give great relief. The application of leeches directly to the part is undesirable, as the bites are apt to produce a good deal of irritation. Where there is a less amount of inflammatory action, the application of solid lunar caustic instantly stops the ulcerative process, by destroying the unhealthy granulations, and covering the part with an eschar, under which a healthier process becomes established; but, in many instances,

where it is small and superficial, the application of the suppositories of diacetate of lead and conium, together with attention to the general health, will be quite sufficient to heal over the ulcerated surface. The more the patient preserves the horizontal posture whilst this process is going on, the better; the uterus rises higher in the pelvis, the congestion of the parts is diminished, and a healthy surface is quickly established.

Ulceration frequently occurs in cases of prolapsus uteri, but this is more frequently in the mucous lining of the vagina, which, in its inverted state, now forms the outer covering of that portion of the uterus which has descended. At times, these ulcerations are of great extent, with thick irregular edges, the thickness of which is in great measure due to the turgid swollen condition of the membrane itself. The same is observed in slighter cases of prolapsus, where ulcerations have formed on the os uteri, and where the uterus is still too high up to admit of examination without the speculum. The mucous membrane covering the os is found swollen and much congested, so that what would have been a superficial ulceration of the os in the natural position of the uterus now becomes a cavity of some depth, owing to the thickened condition of its edges.

The treatment of these ulcerations, connected with a more or less prolapsed condition of the uterus, is usually very simple. The grand point is to remove the congested state of the parts, by keeping the patient in the horizontal posture, and restoring the uterus to its natural position. In many, perhaps in most instances, mere cleanliness will be all that is necessary for the local treatment, for it is well known that even large and deep-seated ulcerations in prolapsus heal with great rapidity, as soon as the displacement is removed. The injection of chamomile infusion, or equal parts of it and poppy decoction, Goulard and poppy decoction, or the decoction of carrots, are among the best local applications which can be used.

In those forms of ulceration of the os and cervix where the hardness and tenderness of the part, the

unhealthy appearance of the ulcer and of its irregular edges, the thin discharge, the occasional darting pains, the rapid loss of health, flesh, and strength, and the cachectic appearance of the patient, excite suspicions of malignant disease, local treatment can sometimes be of great value; but it requires nice discrimination to decide how far escharotics can be used with safety or advantage. In such cases two important indications must be fulfilled before we can form any safe or certain conclusions as to the propriety of their use; viz., first to rectify the deranged state of the digestive organs which always exists in these cases, and to improve the patient's strength by tonics, or, in other words, to treat the constitutional derangement; secondly, to allay the state of local inflammatory action. If these objects have been attained, and the case be one of recent date, a single *free* application of caustic not only produces no irritation of the part, but after a short time, great relief; the darting pains, the hardness, swelling, and tenderness, are much diminished, and the discharge becomes more healthy. The precursory treatment just alluded to will be our best and surest guide in deciding upon the use of an escharotic; for if the part remains hard, tender, and in an irritable state in spite of the previous treatment, the application, by increasing the irritation, would probably do more harm than good. If, on the other hand, it is in a more favorable condition, a strong application of the caustic should be made, for in a case of this sort it is desirable to destroy the unhealthy tissue of the part to some little depth, it is here where the occasional use of the potassa fusa or potassa cum calce is justifiable. The part should be well washed with warm water, and if potass has been used, a few syringefuls of vinegar and water should be thrown up, to neutralize and wash away any remaining portions; after which some strong decoction of poppy-heads will be useful to relieve pain and soothe the irritability of the part.

CHAPTER VII.

DISPLACEMENTS OF THE UTERUS.

THE displacements of the unimpregnated uterus are a subject of great importance, inasmuch as they give rise to a variety of serious affections, which, without an accurate knowledge of their nature, and the causes which have produced them, are exceedingly obscure and intractable; while on the other hand, if they be properly understood, their diagnosis is easy, and the treatment successful:

There are three species of displacement to which the unimpregnated uterus is liable; viz., *Prolapsus*, *Retroversion*, and *Anteversion*.

The causes of these displacements are much the same in each, and may be briefly stated to come under these two heads. Firstly, undue pressure upon the uterus; and secondly, deficiency of that support which is natural and necessary to maintain its proper position in the pelvis.

We know very little of the variations of position short of actual displacement, which the uterus, in a state of health, is constantly undergoing; but when we bear in mind the mobility of this organ, and to what a great variety of influences it is subject as regards its position in the pelvis, we shall be justified in supposing that these variations are at least as frequent and considerable as those of the viscera by which it is surrounded; and cannot only take place to a considerable extent without losing the power of returning to the natural position, but also without producing any decided or manifest discomfort.

Of the three species of uterine displacement above mentioned, retroversion and anteversion can occur both in the virgin state, and after, as well as during preg-

nancy; whereas prolapsus, with the exception of certain rare cases of violence, or complication with morbid growths, can only take place in the uterus which has undergone parturition.

*Prolapsus of the Uterus.*¹

The uterus sometimes descends from its usual station in the upper part of the pelvis to the lower aperture, so that the os uteri may be felt near to the external opening. At other times, it descends entirely out of the vagina, being situated external to the labia, &c. In the first case, it has been called *incomplete or partial prolapsus*; in the second, *complete prolapsus*.

Patients laboring under partial prolapsus, suffer a good deal of inconvenience, partly from the pressure which the prolapsed uterus exerts upon the neighboring parts, especially the bladder and rectum (considerable obstruction to the evacuation of their contents being produced; some patients having complete retention of urine, unless when lying in the horizontal posture and pressing up the uterus with their fingers), and partly from the tension and dragging of the parts which are connected with the uterus producing much pain in the region of the loins. All these symptoms increase when the patient stands for some time; diminish when she lies on her back in the horizontal posture; and disappear entirely when she presses up the uterus with her fingers. As the uterine appendages gradually accommodate themselves to this state of tension and displacement, it is easy to understand why the symptoms at first are more severe, and afterwards gradually diminish, and also why they are more acute when the prolapsus comes on suddenly than where it increases slowly. When produced by sudden violence, we occasionally see prolapsus

¹ Much of the following observations on Prolapsus are translated from Richter's *Principles of Surgery*. For masterly description in the simplest possible style, I hold it to be a model which is unequalled in this or any other language.

attended with fainting, hemorrhage, fever, and inflammation. Prolapsus may also occur during pregnancy.

When the uterus descends wholly out of the vagina, and thus becomes the complete prolapsus, the symptoms which had been produced by the pressure of the uterus on the neighboring parts disappear; whereas those which arise from the uterine attachments being forcibly stretched and dragged into an unnatural shape and position, become much increased. The cervix, as it descends, draws down with it the upper part of the vagina by which it is covered. When the whole uterus protrudes beyond the labia, it drags down the entire vagina, which thus becomes inverted, and forms the outer covering of the uterus. In this state, the uterus is, as it were, suspended from the labia; nor is there any space between them on either side, through which the finger or a probe can be passed. This can never happen without the rectum and bladder (both of which are intimately connected with the uterus) being considerably displaced. The bladder is always turned backwards, so as to take the place of the uterus in the pelvis, and with its urethra lies in an horizontal position, so that we frequently see patients under these circumstances discharge their urine either directly forwards, or even upwards; hence, where the catheter is required to be used, which is frequently the case, it must be introduced backwards in an horizontal direction towards the rectum.

The circulation being more or less impeded when the uterus is prolapsed, it swells considerably, and is sometimes attended with considerable hemorrhage; the inverted vagina which covers the uterus becomes gradually so changed, as to have the appearance of skin. The irritation of the clothes, and the constant trickling of the urine over the tumor, frequently produce ulceration of its external surface, which is exceedingly painful and troublesome, and frequently attended with serious results. When prolapsus takes place suddenly, it is frequently followed by violent pain over the whole abdomen, tenesmus, retention of urine, syncope, and fever. In this case, however, the parts soon accommodate themselves

to the displacement and state of tension, so that one frequently sees neglected prolapsus of long standing, which descend when the patient stands or walks, but go up again when she lies down, and cause her little or no inconvenience.

- Partial prolapsus requires to be distinguished by vaginal examination. This must be done in the upright posture, because when lying down the uterus easily returns to its natural situation. It is better not to make this examination in the morning, shortly after the patient has risen, or when she has been some hours without evacuating the bladder or rectum; in the first instance, the uterus, which, in the horizontal posture, always goes up, has not yet descended so low as usual; and, secondly, when the bladder and rectum are distended, they support the uterus and prevent it descending to any extent; so that if we examine, under these circumstances, we shall either find no prolapsus at all, or at least, not in that degree in which it actually exists. On examination, we find the uterus distinctly in the vagina, and the os uteri quite low down, just within the os externum; so that the diagnosis of partial prolapsus is by no means difficult. The practitioner *can* only mistake it for one other affection, viz., polypus in the vagina; but with a very little attention during the examination, the difference is easily perceived. For further observations on this subject, I must refer to the chapter on Polypus.

The diagnosis of complete prolapsus is still easier; the fleshy mass which is suspended from the os externum by the inverted vagina, has an opening at its lower part (os uteri); it is sensible to the touch, and capable of being returned; the bladder may be distinguished on the upper and anterior surface of the tumor, covered by the vagina—the catheter, descending from the orificium urethræ along this part of the uterus. The finger cannot be introduced along the side of the tumor.

The causes of prolapsus uteri act in two ways: they either produce relaxation of the parts which retain the uterus in its natural position, or consist of some violent means by which the uterus is forced or dragged down.

Hence it is why women who have borne children, especially mothers of large families, are chiefly the subjects of prolapsus; for, as I have already stated, except in unusual cases of violence or morbid growths, it is only met with as a consequence of parturition.

Prolapsus uteri is chiefly liable to come on soon after labor, when the passages are not only relaxed and dilated, but the uterus bulky and heavy. The patient has either risen too soon, before the uterus, vagina, and external parts have contracted sufficiently; or, from the feeble state of the patient's health, these parts have remained more or less in the condition they were immediately after labor; the uterus is still large and flabby; the vagina relaxed and uncontracted; it is a simple case of diminishing support and increasing burden. The upright posture throws the heavy uterus upon the relaxed vagina, which being unable to maintain the necessary degree of contraction, dilates and allows it to descend lower than natural;—the uterine attachments are put upon the stretch—the returning circulation being thereby obstructed, the uterus swells, and its increasing size and weight dilate the vagina still more. The presence of the uterus lower in the vagina than natural increases the leucorrhœal discharge which usually attends this condition, and still further adds to that debility and loss of tone which has been the predisposing cause of the displacement. As the uterus descends, its size and weight increase, until at length, as before said, it presses through the os externum, to which it is suspended by the inverted vagina, the inner or mucous surface of which now forms its outer covering.

If the perineum has not been much injured by former labors, the uterus does not descend through the os externum, but rests upon the perineum, as upon a shelf, by which it is supported. In a woman who has recently borne a child, any cause which produces debility is liable to be followed by prolapsus. Thus the simple leucorrhœa, which is merely the result of a relaxed vagina, and which is so commonly seen in feeble women who have recovered imperfectly from their confinement, or who have broken

down their health and strength by over-nursing, is an almost sure precursor, under such circumstances, of prolapsus. The vagina has lost its contractile power; it has probably never regained a healthy amount of tone since the labor, and is, therefore, capable of affording but little support to the still heavy uterus.

The other set of causes are where prolapsus is produced by violence, as falls, or other severe concussions of the body, violent straining in coughing or vomiting, lifting heavy weights, &c. These causes are the more certain of producing it when they are continually renewed and repeated, especially when the patient at the moment is in the upright posture. This is the reason why we observe prolapsus uteri to be so common among poor people, who are daily exposed to hard labor.

Prolapsus uteri sometimes, though rarely, takes place during the early months of pregnancy; on the other hand, as the uterus rises above the pelvis, from its gradual increase of size, any disposition to prolapsus which has existed disappears as pregnancy advances. Hence pregnancy is generally considered to be a natural cure of prolapsus, provided the patient maintains the recumbent posture for a sufficient time after labor.

The treatment of partial prolapsus consists in removing, as far as possible, the causes which tend to force the uterus downwards; and in increasing the tonic contraction of the vagina, that it may support the uterus better.

The first indication will be effected by rest in the horizontal posture; by brisk purgatives, which act chiefly by promoting the peristaltic of the intestines, and thus not only diminish their bulk, but also the weight with which they press upon the uterus, and by a properly applied bandage for supporting the lower part of the abdomen. The other will be by regulating the functions of the chylopoietic organs, and improving the general tone and strength of the system—effects which we shall obtain by alterative and tonic medicines, cold bathing, sponging, shower bath, &c. (for which I must refer to the preceding chapters), and by astringent injections.

In complete prolapsus, after we have reduced the uterus

to its natural position, the treatment will be essentially the same as in the partial form. In most cases the reduction is easy enough, if we grasp the uterus with the whole hand, and push it boldly upwards and backwards, and then, when it has attained a certain height, upwards and forwards. In some cases it is so swollen as to resist any moderate efforts to reduce it, and even if we succeed, the presence of so large and solid a mass produces such inconvenience and suffering as to become intolerable to the patient, and even to be followed with inflammation and other dangerous consequences. Under these circumstances we must defer its replacement until we have reduced its size by leeches and the horizontal posture.

The practitioner may do much good in *preventing* the induction of prolapsus, by proper prophylactic treatment. When he perceives his patient losing strength, flesh, and color—is incapable of standing or walking without the characteristic dragging pain of back—is suffering from leucorrhœa and numerous gastric derangements connected with this state of general debility, he will do well to enjoin frequent rest in the horizontal posture, prevent constipation, and restore her strength by tonics, cold washing, shower-bath, nourishing food, and pure bracing air. If the leucorrhœa be profuse, an astringent injection will be necessary; moreover, if she be still nursing her child, it will be necessary that she should wean it immediately.

In attempting the reduction of complete prolapsus, where any degree of difficulty is expected, we should always direct the patient to have the bowels well evacuated, and to preserve the recumbent posture for at least twelve hours previous to our visit. This will generally diminish, if not the size, at least the hardness of the uterus sufficiently for our purpose, otherwise leeches must be applied, and even repeated, if necessary.

We occasionally meet with considerable ulcerations on the surface of a prolapsed uterus; indeed, in severe cases which have not been reduced for some time, they are more common than otherwise. They are generally situated about the lower portion, and are probably the

result of excoriations (already alluded to), aggravated by the congested and swollen condition of the uterus. The presence of these ulcerations is no impediment to the reduction, because not only can we equally well apply any local treatment to the part, but now that the obstruction to the returning circulation from the uterus is removed, they quickly assume a healthier action, and rapidly heal of themselves.

Besides the treatment now described, a variety of mechanical supports have been devised, for the purpose of preventing the descent of the uterus, the most common of which are pessaries. The different varieties of these are too well known to require description. I have little to say in their favor, having rarely, if ever, used them in the numerous cases of prolapsus which have come before me in hospital practice. The great indication for treatment is, to restore the tone and contracted rugous state of the vagina, and when we succeed in doing this, we cure the prolapsus; a pessary produces the very thing we wish to avoid—it *dilates the vagina*. I may safely assert, that in moderate cases they are *never* necessary. They appear, it is true, to succeed perfectly when applied, but there can be no doubt that the same degree of vaginal contraction which supports them so favorably, would, with proper management, have sufficed to support the uterus without them. In severe cases of prolapsus, they but too frequently require the size increased from time to time, until it becomes a source of much inconvenience and sometimes mischief: and after all, it is surely much more rational and practical to treat the case by removing the causes of the prolapsus, than merely to apply mechanical means to support the uterus.

The only form of pessary, if it can be called so, which I have used, is a cylinder of sponge, soaked in an astringent lotion; but it is as much for the purpose of keeping the vagina in contact with the lotion as for supporting the uterus. Dr. Locock, as far as I am aware, has the merit of having first used this sponge in prolapsus uteri, although it was proposed by Oslander some time previously. The best mode of preparing it is to wrap it

round the thick end of a piece of wood, which tapers off like a common skewer, tying the sponge firmly over the end of the stick, so that it cannot force its way through, and winding a piece of twine four or five times round it in a spiral direction, to prevent it unfolding and altering in shape. It must be made so small as to pass easily up the vagina, when soaked in the lotion; the stick prevents it from doubling upon itself and lying across the passage; and as soon as it is introduced to the full extent (the patient lying upon her back with the shoulders low), the stick is easily withdrawn, and the sponge left in the vagina. It should be removed twice in the twenty-four hours and thoroughly cleansed. As the contractile powers of the vagina increase, the size of the sponge requires to be gradually diminished, until the patient can dispense with it altogether. A T bandage applied tightly over the perineum and os externum, will assist the sponge in being retained. I am well aware that with some patients this plan will not succeed; they will say that the sponge is forced down in spite of the bandage, &c. &c., but this is merely the result of their own awkwardness and neglect, in not introducing the sponge as directed, and not taking the trouble to tighten the bandage from time to time, as it gets loose.

I rarely employ any other astringent lotion beyond the common decoct. quercûs c. alumine; it is one of the strongest forms which can be used, and is borne with less inconvenience than others.

For supporting the abdomen, I know of no instrument better adapted than "Hull's utero-abdominal supporter." I have frequently seen the uterus keep up merely by removing from it the pressure of the abdominal contents by means of this instrument. A well-applied bandage, like those worn in advanced pregnancy, will also be found a useful means of giving support to the abdomen.

CHAPTER VIII.

RETROVERSION.

ONE of the most frequent displacements to which the unimpregnated uterus is liable, is that of retroversion; viz., where the fundus is turned backwards into the recto-vaginal sac, the os uteri looking more or less forwards.

Perhaps, in no instance has the value of the uterine sound, for which we are indebted to Professor Simpson, of Edinburgh, been so strikingly shown as in the certainty by which we are enabled to detect this displacement, and the facility by which we can rectify it by means of this instrument.

The fact that retroversion may occur in the unimpregnated state was first pointed out by Dr. Moreau, of Paris, although considerable doubts as to the frequency of its occurrence, had been expressed by an English writer, (*Brit. and For. Med. Review*, April, 1845); but it was not until Professor Simpson had established the value of the uterine sound as a means of diagnosis, that he was enabled to prove that this displacement is more commonly met with than any of the others.

Retroversion occurs in a considerable variety of degrees, the distinctions of which are not of much practical importance, beyond that, for the sake of accurate diagnosis, the practitioner ought to be aware of them. A moderate amount of experience will soon render them familiar to a careful observer. Its simplest form is where the uterus is merely turned backward, as expressed by the term "retroversion." It may vary in degree from a slight inclination to where it lies horizontally across the pelvis; the fundus occupying the recto-vaginal sac and pressing against the rectum, the os uteri turned forwards towards the symphysis pubis. It occurs chiefly where the uterus

is heavier and more bulky than usual, and where there is great laxity of the surrounding soft parts, as is the case just after an abortion; or under other circumstances of great debility. This form of displacement is usually of recent date, and is probably spontaneously rectified and again induced, from time to time, by the influence of position, the action of the bowels, and any efforts of the abdominal muscles, as in coughing, sneezing, or lifting heavy weights.

It is only by the aid of the uterine sound that we know how greatly the direction, as well as the position, of the unimpregnated uterus may vary from time to time, even in a state of health, and I have good reason to know that under the circumstances just mentioned, the uterus may deviate very considerably from its natural position, not only without any peculiar inconvenience to the patient, but also to be quite capable of returning to its natural position without assistance. If, however, the state of displacement has continued for some time, or if the fundus has been forced downwards and backwards by the superincumbent weight of the loaded bowels, in spite of a fair amount of vaginal support to its lower portion, which is a very different condition to that I have just described, the uterus becomes bent upon itself, like a retort, while the lower portion shows little or no displacement; and were it not objectionable to multiply terms, the words "retroflexion" or "retorsion," might be well applied to this condition. The point at which the bend takes place, is sometimes in the body of the uterus just below the fundus; more frequently, however, it is observed to be lower down, and is usually about the lower part of the body, just above the cervix; but although the direction of the cervix varies but little from the natural state, the os itself generally looks forward; and this, in all probability, is owing to the anterior lip being dragged upwards by the tension of the anterior wall of the uterus which forms the convexity of the curve.

The degree of curve will in no small degree influence the condition of the fundus and cervix. In some cases, where the amount of superincumbent pressure has been

but slight, this condition has produced so little inconvenience, that the patient has been scarcely aware that anything was amiss. If, on the other hand, the curve is sharp, so that the uterus is closely doubled upon itself, a considerable obstruction to the returning circulation is produced, and the parts on each side of it (fundus and cervix) become swollen and tender. In severe cases, where the patient has been in great suffering, the cervix has been found swollen to three or four times its natural size, and so altered by excessive engorgement as to resemble a polypus or fungoid tumor.

Professor Tiedemann, in some valuable researches on what he calls "the congenital obliquity of the uterus," has shown that the uterus is occasionally found with its fundus permanently bent forwards or backwards, either as a congenital malformation, or where the displacement has been of such long standing as to have assumed this form; amongst much valuable literature which he has collected on the subject, we may quote the following case described by Schreger (Horn, Nasse, und Henke, *Archiv. für Medizinische Erfahrung*, 1817, vol. i. p. 3111). In a young woman who had died of consumption at the age of twenty, the uterus was found shaped quite like a retort; the fundus turned back into the hollow of the sacrum, and inclined somewhat to the right side. The posterior wall of the vagina was very short, and prevented the uterus being raised into its natural position. The os and cervix uteri were nearly horizontal, and turned towards the inner surface of the symphysis pubis.

In examining a case of retroversion of the unimpregnated uterus during life, the finger can frequently reach a firm, globular mass, like a walnut, situated behind the cervix uteri, and evidently posterior to the vagina. At the first touch, or to one unacquainted with this condition of the womb, it seems like a lump of scybalous matter in the rectum; for in many, perhaps in most instances, the finger cannot reach sufficiently high up to distinguish the continuity of this mass with the cervix, the point of flexion being usually in the body of the uterus, close above its junction with the cervix. In other cases, where the

fundus is low down, being either on a level with, or even lower than the os uteri, the curve in the posterior wall can easily be felt and traced by the finger from the cervix to the fundus.

On examining per rectum, we feel the same hard lump through the anterior wall of the intestine; and by being able to reach higher up in this direction, than with the finger per vaginam, we can frequently verify or correct our first impression. But it is by means of the uterine sound that we obtain such peculiarly valuable and interesting results in this form of uterine displacement.

On passing the sound in the usual direction, upwards and forwards, it becomes almost immediately arrested in the canal of the cervix; but on turning its point backwards, exactly in the contrary direction, it will pass along, and then glide downwards and backwards until the measure-mark of two inches and a half, having reached the os uteri, shows us that it has entered the uterine cavity to the natural extent. The bulbous extremity of the instrument is now distinctly perceived in the centre of the tumor, which is between the rectum and vagina, and may easily be felt through both of these passages, thus proving that it is the fundus uteri forced down into this unnatural position. By carefully turning the instrument round, and carrying its point upwards and forwards, we shall also carry up the fundus upon it, and restore the uterus to its proper position.

On examination, either by the vagina or rectum, we now find the tumor has entirely disappeared, and as far as the finger can reach through the latter passage, the uterus will be felt running in a direction upwards and forwards, and held in that position by the sound, which is within it. In some instances, the uterus, when once replaced, retains its natural position, either permanently, or at least for some little time afterwards; but in many, especially those of long standing, and where the fundus has been forced very low down, the handle of the sound requires to be held firmly, so as to keep the uterus *in situ*, and the moment we loose our hold of it (the sound), it will turn round, rising at the time upwards and forwards

towards the symphysis pubis, showing that its point had turned downwards and backwards. In other words, the uterus has returned to its former state of displacement, carrying the sound along with it. We shall now again feel the tumor in the recto-vaginal sac, containing the point of the sound within it.

The presence of this displacement is not necessarily indicated by any peculiar symptoms; indeed, in some instances, it will be found existing without a single circumstance to make the patient suppose that she was otherwise than in a state of the most perfect health, even as regards the catamenial periods. Generally, however, there is a dull pain and sense of pressure about the sacrum, verging to one side or the other, according to the direction which the fundus has taken. In some cases, the same effects are also produced anteriorly by the os uteri pressing against the neck of the bladder, when there will also be frequent urging and difficulty to pass water. These symptoms are seen more especially where the uterus has been suddenly retroverted by some accidental violence, or where the uterus has been so sharply doubled upon itself as to obstruct the returning circulation from the lower half, so that the os and cervix become engorged and swollen. If the displacement be of recent occurrence, she suffers a good deal of dragging pain on both sides of the pelvis, in the vicinity of the broad ligaments, and also in the course of the round ligaments, sometimes amounting, in severe cases, to a sensation of tearing. In some instances, she has pain and numbness down one thigh, with difficulty or inability to move or stand upon that leg, arising from the fundus pressing on some of the sacral nerves; since the pain is instantly removed by the replacement of the uterus, and the numbness or lameness ceases in an equally striking manner. At times this pressure, pain, numbness, &c., increase to a painful extent, and then, after a while, subside, and sometimes rather suddenly, probably arising from the passage of feces, which, passing along the superincumbent coils of intestine, depress the fundus.

Retroversion seldom exists for any length of time with-

out producing more or less irritation, congestion, or even inflammation of one ovary; this usually arises from the broad ligament on one side being put upon the stretch, and the returning circulation of the ovary being thereby obstructed. In this way we frequently see a variety of effects produced which are neither the immediate nor the necessary results of retroversion, but are indirectly caused by the congested state of the ovary. Thus, dysmenorrhœa, of an ovarian character, accompanied with fibrinous exudations, or profuse menorrhagia, are sometimes observed to attend retroversion, although, in reality, they have no other connection with it beyond arising from the ovarian affection which it has produced. In some cases, distinct oophoritis has been the result; in others, it has assumed the chronic form, with considerable enlargement, and the various symptoms which belong to this condition; in others, it has been attended with those peculiarly agonizing sufferings which attend displacement, and more or less strangulation, of the ovary. In by far the majority of cases, it is the left ovary which is affected. For a description of the symptoms produced by these various forms of ovarian affection, I must refer to the chapter on that subject.

The most common causes of retroversion (as already stated) are a flabby condition of the uterus and relaxed state of the vagina, with a constipated habit of bowels, by which the uterus is not only deprived of the natural means of support for maintaining its position, but its fundus is also forced down by the pressure of the superincumbent intestines. These causes will act with still greater force when the uterus itself is larger, heavier, and more flabby than usual, as after abortion. In other cases, retroversion has been evidently produced by violent efforts of the abdominal muscles, and I have occasionally met with it as the result of a severe fall upon the back. It may also be produced by the mechanical pressure or drag of diseased growths, whether in the uterus itself or neighboring organs.

The reposition of the displaced organ, by means of the uterine sound, will be a necessary step in almost every

case, because it may be assumed, that if the retroversion has been of sufficient extent and duration to cause such symptoms as to induce the patient to consult a medical man, it will have but little chance of spontaneous reposition until it has been replaced by the uterine sound in the first instance. In some cases the uterus is replaced with the greatest facility; and these are probably where the retroversion has been of short duration, and where the uterus was capable of returning to its natural direction by the mere influence of position: in most of these it retains its direction when the sound is withdrawn. On the other hand, we occasionally find the fundus very difficult to move out of its unnatural position: it feels as if wedged fast in every direction, and the attempt to lift it produces much suffering. The most common cause of this difficulty is the pressure of loaded intestines upon the retroverted uterus; a less common cause of difficulty, is where, on account of long-standing displacement and the firmness with which the fundus has been jammed down against the surrounding soft parts, adhesions have taken place which render the case incurable.

When depending on the pressure of loaded bowels, it will be always desirable to have them well emptied by brisk laxatives for a few days previously, by which means the uterus is rendered more movable, and the reposition becomes not only more easy, but more safe. The feeling of difficulty or ease which the sound communicates to the fingers of the practitioner, will soon guide him as to whether he is to turn the fundus to the right or the left in moving it forward into its natural position. But in either case, the forefinger of the right hand will be of much assistance, by gently pushing the fundus in the same direction that we are trying to move it with the sound. When we have carried the fundus upwards and forwards, it is desirable to pull the whole uterus bodily forwards with the sound, so as to allow the coils of intestine which were resting upon it to settle down behind, and thus support it.

In those cases where the patient has suffered a good deal from that sacral pain which is so characteristic of

retroversion, a striking change is produced in her feelings the moment the uterus is replaced. She finds that she has suddenly lost the pain which has so long troubled her, as also many of the uneasy sensations produced by the dragging of the uterine ligaments.

Before removing the sound, it is desirable that the patient should turn upon her face and assume the prone posture, as by this means we prevent the uterus resuming its retroverted position, to which it is more or less disposed, especially where the displacement is of some duration. The prone posture may easily be rendered very tolerable by a little management. A doubled bolster, or a couple of sofa cushions with a large pillow over them, will raise the trunk and pelvis of the patient sufficiently to allow a certain amount of flexion of the thighs upon the trunk, and thus avoid the severe aching of the loins which is apt to come on where too straight a position has been maintained. She should remain prone for an hour or two, and on rising should not turn upon her back, but get upon her knees, and thus step off the bed or sofa on which she has been lying.

If the displacement be of some standing, we can scarcely hope that the mere reposition will be of any permanent benefit. In order, therefore, to prevent the uterus returning to its retroverted condition, the patient must maintain the prone posture for some considerable time; and to do this effectually, and with comfort, the prone couch, as used by the late Dr. Verral, in spinal and hip diseases, will be found of great service. As soon as she has ascertained by experience the precise angle which suits her, she finds that no other position is so comfortable. In questioning patients who are suffering under retroversion, a large portion will say that they wake lying on their faces, in which posture they find they sleep with most comfort. From the same reason, I frequently observe that the position on the knees and elbows (or making the salaam, as an oriental patient once called it) is a powerful means for restoring the uterus to its natural position, even where it had again become considerably retroverted. This posture cannot, of course,

be used beyond a few minutes, but the patient is usually assured that she has succeeded in righting the uterus, by the distinct cessation of the pressure, weight, and even pain, about the sacrum, which had begun to return. In one interesting case, where the patient, in consequence of a short walk, had brought on a return of her old sensations, and where this extra-prone position for the first time had failed to replace the uterus, she knelt upon a stool, and resting her forehead upon the floor, maintained this nearly inverted position for some moments, until the sudden cessation of pain and pressure at the sacrum told her that the plan had succeeded.

In the majority of cases, I have found that this plan of treatment, viz., by reducing the bulk and weight of the intestines by the laxatives above mentioned, and by maintaining the uterus in its natural position by the prone posture, has succeeded well, and the disposition to retroversion has gradually subsided. The period required for this purpose has varied considerably, depending partly on the duration and inveteracy of the case, on the perseverance of the patient in preserving the prone posture, and, though last, not least, on the management of herself in this position.

If this plan has entirely failed, and the inconveniences, &c., produced by the retroversion are considerable, we have no choice but to use the ingenious supporter devised by Professor Simpson, and which, of course, fixes the uterus in the angle at which we set the instrument. This supporter is too well known to need a description. I think that I have rendered it more tolerable to the patient, at the suggestion of my friend, Professor Retzius, of Stockholm, by having the uterine portion made of ivory instead of metal, and flattened so as to correspond to the shape of the uterine cavity, and thus diffuse the pressure over a larger surface.

The easiest mode of applying this treatment is to pass it backwards, while the uterus is retroverted, since it enters more readily in this position; we can thus gently rotate it forwards, as we do with the sound in replacing a retroversion, and then fix it upon the frame, which

rests upon the mons veneris. If the system of the patient be irritable, these instruments are apt to produce a good deal of ovarian as well as uterine suffering, especially at the catamenial periods, so much so as even sometimes to preclude their use. In general, however, they can be borne, not only with ease, but with much comfort; and the patient is unwilling to part with what has given so much relief to her various symptoms.

CHAPTER IX.

ANTEVERSION.

ANTEVERSION of the impregnated uterus does not occur so frequently as retroversion. It is where the fundus uteri is thrown forwards against the bladder, producing considerable discomfort, and occasionally severe suffering in the organ. As in retroversion, the os and cervix are not necessarily turned in the opposite direction, but are frequently found nearly in the natural position, the uterus being more or less bent upon itself at about the upper part of the cervix, or lower part of the body.

On examination per vaginam, we shall find considerable tenderness in front of the os and cervix; it is evidently seated in a hard and somewhat movable body, which can be felt through the anterior wall of the vagina, extending from the cervix forwards. If the sound be introduced, it takes a direction more forwards than usual, and can be distinctly felt in the tumor above mentioned. If the os uteri has partaken in the displacement, it will be found looking more or less backwards, so as sometimes to be in direct contact with the posterior wall of the vagina, in which case it seems to the finger as if there were no cervix at all, the whole uterus forming nearly a

straight line from the fundus behind the symphysis pubis to the os uteri in the hollow of the sacrum.

As this displacement is so entirely opposite to retroversion, it may be inferred that the symptoms will be very different. The patient complains of constant uneasiness in the pubic region, increased by exertion, and capable of being aggravated into severe suffering by even moderate distension of the bladder, and especially at the catamenial periods. There is a frequent desire to empty the bladder, as the accumulation of even a very small quantity of urine brings on great uneasiness, and an irresistible desire to void it. This is owing to the pressure of the fundus against the bladder, producing much irritability and pain on the slightest distension. From the same reason we occasionally observe, where the fundus has been forced down against it, that the patient may even have retention of urine with severe strangury.

If the uterus be bent upon itself, as above mentioned, an obstacle is thus produced to the free discharge of the catamenia; the uterus swells, as in ordinary cases of obstructive dysmenorrhœa; violent paroxysms of pain come on, like those in abortion or labor; at length the retained discharge is forced through with a gush, and she experiences more or less relief, until the uterus becomes again distended. It will, therefore, be readily understood that the patient will not only suffer severe dysmenorrhœal pain at these periods, but that all the symptoms arising from the pressure of the anteverted uterus on the bladder will be greatly aggravated. From the pressure upon the bladder, and also the distension of the uterus from retained menstrual fluid, she is frequently compelled to bear down involuntarily, which generally increases her sufferings.

Anteversion is frequently accompanied with a slight leucorrhœal discharge; and if the displacement be considerable, and the uterus much bent upon itself, the anterior lip swells, grows hard and painful, and may be easily mistaken, by a careless observer, for chronic inflammation of this part; and I myself have seen a case of this sort, which, under this impression, had been liberally treated

with various sorts of escharotics for some months, instantly relieved by passing the sound and replacing the uterus.

The causes of anteversion, as far as I have had the means of judging, are much the same as those of retroversion: deficient uterine support, undue pressure from the superincumbent intestines, violent exertion, long-continued riding on horseback, when the uterus is relaxed, especially shortly after an abortion.

For the same reason, the general treatment will be of a similar character. The loaded condition of the bowels must be removed by the remedies I have already recommended in retroversion. The uterus must be replaced by means of the sound, and even for a few minutes held in a slightly retroverted position; the patient directed to use the supine posture, with the knees drawn up and shoulders low; and this position should be especially enforced at the approach of the menstrual period.

Anteversion appears to be much more amenable to treatment than retroversion, probably from the supine posture being so much more easily maintained than the prone one; nor do I recollect to have met with a single case where it was necessary to use Professor Simpson's uterine supporter.

CHAPTER X.

PROLAPSUS VESICÆ.

UNDER the head of prolapsus uteri I have pointed out the effects which may result from *general* relaxation of the vagina. I will now offer a few remarks on a displacement of rare occurrence, the result of a *partial* relaxation of this canal.

The anterior wall of the vagina is well known to be in immediate contact with the posterior wall of the blad-

der at the lower part of it, and is, in fact, the means by which this portion of the bladder is supported, when distended with urine. Hence it follows, that if the anterior portion of the vagina loses its tone, and becomes relaxed, it is no longer capable of affording that amount of support to the posterior wall of the bladder which it otherwise would; hence it yields to the distension and weight of the urine, and instead of rising as it accumulates in the bladder, the posterior wall, having no support, bulges down into the pelvis, so that we feel the corresponding portion of the vagina distended by a fluctuating tumor. This may vary from a slight fullness to a considerable tumor projecting between the labia.

The term "*procidentia vesicæ*" is given to this displacement by Sir C. M. Clarke: "First, because it is really the bladder which falls, and which carries the vagina with it in the same way in which a falling uterus does; and secondly, because the name directs the mind of the practitioner to an important part of the treatment." (Vol. i. p. 131.)

The swelling, as I have before observed, is formed by the posterior and lower part of the bladder, which, not receiving the necessary support from the vagina, yields to the pressure of the urine as it accumulates in the bladder, and bags or bulges down into the pelvis, covered by the relaxed anterior wall of this passage. It may, therefore, vary greatly in degree, from a slight, boggy, half-fluctuating feel, extending from the urethra backwards, to a considerable projection which fills up the vagina, or even to the extent of a soft bag-like tumor projecting from the os externum, and evidently distended with fluid.

In a slight degree it probably exists more frequently than is suspected. To a certain extent, it must exist in every case of prolapsus uteri; but pure prolapsus, or *procidentia vesicæ*, to such an extent as to project from the os externum without any corresponding displacement of the uterus, is of rare occurrence.

As this displacement so essentially depends on a relaxed condition of the vagina, many of its predisposing causes will be the same as in prolapsus uteri. It is well known

that the vagina is much relaxed after premature expulsion of the ovum, and after labor at the full term; and if this condition be kept up afterwards from debility and want of tone, it will not be enabled to afford the bladder the proper amount of support, when pressing strongly against it. Thus, when more or less distended with urine, any sudden or powerful efforts of the abdominal muscles will act with great effect in detruding the lower part of the bladder into the vagina.

Prolapsus, or procidentia vesicæ, to such an extent as to protrude beyond the labia, is seldom, perhaps never, of recent formation, but has acquired this amount of displacement gradually, and has been probably, therefore, of some duration. It occurs, however, to this extent, too rarely to afford sufficient data.

A very little attention to the patient's enumeration of her symptoms, even without the aid of an examination, will show that they are not those of prolapsus uteri. It is true she complains of weight and bearing-down, but the comparison goes no further; the sense of weight is not referable to the back and lower part of the pelvis, but to the symphysis pubis, or, in fact, lower part of the bladder. Instead of being strikingly relieved by lying down, as is the case in prolapsus, her discomfort (especially if there be a little urine in the bladder), is increased by the horizontal position. How far it would be relieved by inclining forwards into the prone position, I have not had the opportunity of judging; but it might be fairly expected that if, by altering the patient's position, we take the weight of the urine from the unsupported posterior wall, and throw it forwards upon the anterior one of the bladder, we should relieve her of the dragging pain behind the symphysis pubis, which is one of her prominent symptoms.

She is also troubled, especially when in the recumbent posture, and therefore particularly at night, with a frequent desire to pass water; in fact, she is never without the feeling of wanting to empty the bladder; for, although after passing a certain quantity, the stream stops, yet the sensation continues, and this is a correct indication of

what is really the case. The lower and posterior part of the bladder, which forms the tumor, bulging into the vagina, has lost its power of contraction, and still retains a quantity of urine when the other parts of the bladder have quite contracted, and which only can be evacuated by the patient pressing up the tumor with her fingers per vaginam. Thus, then, it will be easily understood that her various symptoms, and also the size of the tumor, will be increased in proportion to the quantity of urine which has collected in the bladder.

We are indebted to Sir Charles M. Clarke for the first correct description of this displacement, and for pointing out a remarkable symptom which is very diagnostic.

"The peculiar symptom which marks this complaint, is a pain referred to the navel, with a sense of tightness. This pain is greatest when the bladder contains the largest quantity of urine; and as it parts with its contents, the uneasiness diminishes, till at last, when it is empty, or nearly so, the symptom goes off altogether. The superior ligament of the bladder runs from the fundus of the bladder to the navel, to which it is attached; and perhaps a stretched state of this ligament (the remains of the umbilical arteries), or the effect produced by the dragging upon the navel itself, may account for this symptom." (*Op. cit.*, vol. i. p. 133.)

The diagnosis will be rendered still more certain by vaginal examination. If the displacement be but in a slight degree, it will be desirable that the patient should retain her urine for a few hours, so that the protrusion may be well marked. In slight cases, the whole tract of the upper or anterior wall of the vagina, from the edge of the pubic arch backwards, feels boggy, and looser than natural; and it is precisely in these cases where a slight distension of the bladder is necessary for a correct diagnosis, as even this part still retains sufficient power of contraction to expel the entire contents. In severer cases, it will be unnecessary for her to retain the urine, for the tumor constantly remains full, even after her utmost efforts to evacuate the bladder.

In examining a prolapsus vesicæ of moderate amount,

we find the anterior wall of the vagina bulging backwards; the swelling can be traced from the urethra, and is distinctly beyond the vagina, through which it is felt. It evidently contains fluid; and when a curved sound or catheter is passed into the bladder with its point backwards, it passes into the swelling, and may be felt by the finger per vaginam. This equally holds good with a prolapsus vesicæ which has reached the extent of protruding between the labia; but the size of the tumor renders it more liable to be mistaken by a superficial observer. There can be no difficulty in distinguishing it from prolapsus uteri, as the firmness of the tumor, the os uteri in advance, and the shortened vagina, are characteristic of this latter displacement. In prolapsus vesicæ, careful examination will show that the vagina is pervious, although apparently closed by the soft, fluctuating tumor, which evidently arises from the posterior and lower part of the bladder; and if the finger be carried beyond it, the os uteri will be felt in its natural position.

This displacement is usually attended with more or less simple leucorrhœa, which partly arises from the relaxed condition of the vagina, and partly from the irritation produced by the size and friction of the tumor.

Another result is occasionally noticed in cases of some standing, and was first pointed out by Sir C. M. Clarke. "In procidentia of the bladder of long standing, the pressure of the posterior part of this viscus (when containing some urine) upon the cellular membrane connecting it with the anterior part of the cervix uteri, elongates this cellular membrane; but as it does not yield readily, the anterior lip of the os uteri is dragged down with it so as to be very much lengthened. In this altered state of the parts, the os uteri, instead of being found in the centre of the pelvis, opens directly backwards, and lies in contact with the posterior part of the vagina; so that the space between the elongated anterior lip of the os uteri and posterior part of the vagina is very small." (*Op. cit.*, p. 136.)

The treatment, as regards the general health, will be the same as a prolapsus uteri, viz., to diminish intestinal

pressure, and to increase the tone and strength of the patient. Astringent injections will also be necessary to rouse the contractile power of the vagina, and a still further support may be given to the part by the use of the sponge pessary soaked in decoctum quercûs c. alumine, as I have already described.

CHAPTER XI.

POLYPUS UTERI.

THE subject of polypus uteri has been differently divided by different authors. The divisions most commonly known are those which are founded upon their nature or position, viz., where polypi are classed under two heads—non-malignant and malignant; and, 2dly, the well-known classification of Levret, viz., those which grow from the fundus; 2dly, those springing from the cervix; and, 3dly, those which are attached to the os uteri. Both of these divisions are tolerably unobjectionable, but in a practical point of view, neither is of so much value as was once supposed.

As a general definition of uterine polypus, I would call it a growth attached to some part of the inner surface of the uterus, by a narrower portion or stalk, and occurring under a great variety of forms. Instead of classing these growths according to the part of the uterus from which they spring, which a very little observation soon shows to be incorrect, it will perhaps be simpler to describe them according to their general peculiarities of growth, structure, &c. The student will thus learn to recognize them by their more remarkable and characteristic features. At the same time it must be remembered that I do not profess to enter into the morbid anatomy of uterine polypi, beyond what is necessary for a practical consideration of the subject.

Uterine polypi vary as to their size, structure, and the part of the organ from which they grow. The large polyp, which are usually of a fibrous tissue, arise from the sides or fundus of the uterus, while the soft polypi, which consist chiefly of fibro-cellular tissue, more or less condensed, and covered with mucous membrane, arise from the os and cervix.

The large polypi generally consist of that peculiar white, dense fibrous tissue which forms the well-known fleshy tubercle of Baillie—the “fibrous tumor” of the present day; their structure “is hard, and consists evidently of a white substance, divided by thick membranous septa; when cut into, it shows precisely the same structure with the tubercle of the uterus just described; so that a person looking upon a section of the one and the other out of the body, could not at all distinguish between them.” (Baillie's *Morbid Anatomy*.) Where one of these tubercles has formed in the wall of the uterus, near to its inner surface, it becomes at length dislodged from the part in which it was imbedded by its gradual increase of size, and partly also by the separation and contractions of the surrounding uterine fibres; it is thus pushed into the uterine cavity, merely covered by the lining membrane, which, with more or less connecting cellular tissue and nutrient bloodvessels, forms a pedicle.

The varieties of structure which these fibrous tumors present are very considerable, and for a fuller detail of them I must refer to the chapter on that subject. I may, however, briefly state that when of recent formation, they are soft and spongy, apparently consisting of laminæ of cellular tissue, answering to the description given of them by Levret, where he compared their structure to that of a boiled cow's udder. By degrees their central portion begins to show the white radiating septa of cartilaginous appearance, and hard white masses of the same structure, sometimes containing calcareous or phosphatic matter, appear after a time. All these different appearances may be seen in a large polypus: the outer portion is soft and spongy like a piece of placenta, and if the blood has been

drained from it, we see the justice of Levret's comparison, while the harder and more central parts present the ordinary characteristics of the fleshy tubercle.

These larger polypi are usually solitary, but the smaller ones, which have been commonly called *mucous polypi*, and which have their attachment to the edge of the os uteri, or just within the canal of the cervix, generally occur two or more together, or sometimes like a fringe around the greater part of the os uteri. In some cases these little growths appear to be of a hemorrhoidal character. At first these smaller growths are of a vesicular appearance—they scarcely deserve the name of polypi, but rather of vegetations from the inner surface of the uterus, the nature of which has been recently investigated by Professor Simpson, of Edinburgh. By the aid of sponge tents and the speculum, he has been enabled to demonstrate the existence of these growths during life, where all the ordinary means of examination had failed to detect them; and the entire cessation of the menorrhagia upon their removal has satisfactorily proved that their presence within the uterus had been the cause of it. They are by no means an uncommon class of uterine polypi, and occur under a considerable variety of form and attachment, depending, I presume, on the amount of development which they have attained. Thus, in the early stage, they are merely, as Professor Simpson has observed, "imbedded, like shot or peas, in or beneath" the mucous membrane of the cervical canal; while in a more advanced state they present the appearance of small soft semi-transparent bodies of a pale-red color, attached by a slender pedicle, which is frequently long enough to let them hang loosely in the vagina, and varying in size from that of a hemp-seed to a cherry.

"A polypus of the first species," says Richter, "which grows from the fundus uteri, is very difficult to detect at first. As long as it is very small it produces no change whatever in the uterus; but, as it increases in size, it distends the uterine cavity, and, without careful examination, might even cause a suspicion of pregnancy. The abdominal swelling, however, does not take place in the

same degree, and at the rate at which it does in pregnancy; there is no cessation of the catamenia, no enlargement of the breasts, nor any movement to be felt during the further progress of the case.

"As long as the polypus is in the uterus it grows slowly. It frequently, at this time, induces severe menorrhagia. Pregnancy can scarcely occur under such circumstances; and when it does, is usually terminated prematurely. Cases nevertheless have occurred, where patients have gone their full time, and done well. (§ 614.)

"As the polypus increases, it dilates the os uteri, and at last descends into the vagina. This takes place either suddenly, in consequence of some shock, or slowly and by degrees. In the latter case, pains like those of labor come on, which gradually force it into the vagina. As soon as it occupies the vagina, and is no longer confined and pressed upon by the uterus, its growth is more rapid, and it produces much more discomfort. It presses upon the bladder and rectum, and interferes with the evacuation of their contents. It gives rise especially to repeated and violent hemorrhages, which greatly debilitate the patient, and seriously reduce her. The pedicle of the polypus is so tightly encircled by the os uteri, that the returning circulation of the tumor is obstructed; its vessels become distended, and thus produce hemorrhage. These discharges sometimes stop spontaneously, and again return, from the slightest causes, as from riding, walking, &c. During the intervals, she has a copious watery mucous discharge, which adds equally to her debility. (§ 615.)

"If the polypus has been some time in the vagina, it at last protrudes; this takes place either gradually, or suddenly in consequence of some shock. This change produces a fresh series of symptoms. As it cannot descend so far without dragging down the fundus uteri with it, and thus causing a gradual inversion of the uterus, the patient usually suffers from a painful sense of dragging and stretching at the lower part of the abdomen; the bladder and urethra are more or less displaced, and the evacuation of urine obstructed. (§ 616.)

"A polypus in the vagina, or even external to it, may easily be mistaken for a prolapsus uteri; an error which may be attended with serious consequence, and which usually may be easily avoided by careful examination. A polypus is commonly softer, and is less sensitive than the prolapsed uterus. The os uteri is the distinctive mark of partial prolapsus where there is no inversion. A polypus may frequently have a depression corresponding to an os uteri, but which may be easily distinguished; moreover, a sound passes deep into the os uteri, but not into such a depression. The shape of a polypus is like a pear suspended by its stalk, viz., thicker below, smaller above; the partially prolapsed uterus is small at its lower part, and gradually becomes thicker upwards. A prolapsed uterus can be easily returned, and with much relief to the patient. The polypus cannot be returned, and every attempt to do this causes the patient great suffering. A sound may be introduced by the side of the polypus along the vagina up to the fundus uteri; but if this be attempted in prolapsus, it is soon stopped by the inverted vagina, where it is reflected upon the cervix uteri. (§ 617.)

"There is still less difficulty in distinguishing a polypus which has passed through the os externum, from a *complete* prolapsus uteri. In the first place, the os uteri, at the lower part of the tumor, which can now not only be felt, but seen, characterizes the uterus. As in the case of partial prolapsus, a sound can be passed deep along the vagina up to the fundus uteri, which is impossible in prolapsus. The result, also, of an attempt to return the tumor, is equally diagnostic here. (§ 618.)

"Inversion of the uterus is commonly a result of severe labor, and is, therefore, easily distinguished from polypus by its predisposing cause. As long as the inverted uterus remains in the vagina, its upper part is broad, its lower extremity smaller. The shape of a polypus is just the reverse. From this reason, wherever a large polypus has descended into the vagina, the os uteri is usually not much dilated; whereas, in a small inversion, it is generally much dilated. As with prolapsus the reposition of

the uterus is followed by immediate relief, so is every attempt to return a polypus attended with great suffering. (§ 619.)

"When an inverted uterus protrudes at the os externum, its shape, like that of a polypus, is thick below and small above. Moreover, there is no opening at its lower extremity, so that in this case, a mistake may be more easily made, although it may be readily avoided by care. A fold or ring may be felt near the os externum, encircling the inverted uterus;—this is the os uteri, and is not felt in the same way with a polypus. The finger or a sound may be passed up alongside of a polypus, but not of an inverted uterus. The stalk of a polypus is firm and hard, whereas the upper and smaller part of the inverted uterus, being hollow, is soft and flabby. The history of the case also will usually throw sufficient light upon the nature of it." (§ 620.)¹

One of the earliest symptoms leading us to suspect the presence of a polypus, is the irregularity and profuseness of the catamenia, which occurs without our being able to assign to it any of the causes of menorrhagia which I have already considered. At first the patient scarcely notices the change, but as the irregularity and profuseness of the discharge increase, her health begins to suffer, and this, at last, drives her to consult a medical man; so that when at length an examination is made, the polypus has usually attained a sufficient bulk to be easily detected.

Of course, there are endless varieties, as regards the amount of the discharge, its effect upon the patient, and the time the polypus takes to present at, and press through, the os uteri. It is a well-known fact that small polypi may exist for a considerable length of time without producing menorrhagia; but these must be looked upon as exceptions to the general rule, and not invali-

¹ I have made this long quotation on the diagnosis of polypus from Richter's "*Anfangsgründe der Wundarzneikunst*," because I hold these admirable descriptions, in his simple but graphic style, to be models which will well repay the study of them.

dating the remark I have already made, that increasing irregularity and profuseness of the catamenia, in the absence of any evident and assignable cause, justifies the suspicion of polypus.

The symptoms of polypus depend very much upon the size and situation of the tumor. As I have before remarked, the earliest are those arising from the uterine irritation which their presence causes. The uterus becomes congested, the catamenia profuse and irregular; frequently soon returning after a long and exhausting attack of menorrhagia, or there is a constant sanguineous discharge, only interrupted by short and irregular intervals, with more or less leucorrhœa between.

If the polypus be of a species which will attain a considerable size, it gradually distends the uterus, and by preventing that amount of contraction which ordinarily closes the mouths of the vessels opening upon its surface, adds another cause of hemorrhage to that which already exists. The health and powers of the patient soon flag under this continued drain; she becomes pale, feeble, and cachectic; the digestive organs are deranged; she has pain of the back, sense of weight, and dragging about the hips. She finds that the hemorrhage is daily brought on more and more easily, until she is seldom free beyond a few hours, and then perhaps only when she preserves the horizontal posture. "As the polypus grows larger (says Dr. Gooch), it gradually dilates the uterus, till at length this organ, stimulated by its bulk, begins to contract upon it, protruding it through the dilated orifice. The polypus sometimes passes through the orifice gradually and insensibly, sometimes suddenly during the action of the bowels. I have known several instances in which patients, after this action, have been suddenly seized with retention of urine, and on examination, a polypus was found in the vagina, compressing the urethra." (*On some of the more Important Diseases of Women.*)

When once this change has taken place, the circulation of the polypus becomes a good deal impeded by the pressure of the os uteri, which encircles it; the mass swells; large varicose veins, much distended with blood, begin

to ramify over its surface, and give rise to severe hemorrhage, either from over-tension or the effects of ulceration. It will therefore be of the greatest importance to detect the presence of a polypus as soon as possible, before the patient has suffered much from the continued irritation and menorrhagia.

It is to Professor Simpson, of Edinburgh, that we are indebted for a masterly paper, *On the Detection and Treatment of Intra-uterine Polypi*, in which he has pointed out the great value of dilating the os uteri with sponge tents, for the purpose of exposing and operating on polypi which are still within the uterine cavity.

On examination of a polypus at an early stage, when it has not attained such a size as to press upon, still less to dilate, the os uteri, we find the os and cervix somewhat swollen, and the uterus itself more bulky than natural, very much as it is just before a catamenial period. Occasionally a careful examination with the uterine sound, if it be of the larger kind of polypus, will assist our diagnosis; but it usually happens that we have no other evidence than what can be inferred from the character and history of the patient's symptoms, amounting merely to a suspicion of the case, the true nature of which can only be cleared up by dilating the canal of the cervix with a succession of sponge tents, and then examining the uterine cavity with the finger or a speculum.

This mode of examination applies especially to that class of small soft polypi which are found most frequently in the canal of the cervix, or springing from the os uteri itself. "Small vesicular, mucous, or cellular polypi (says Professor Simpson) sometimes grow from the fundus uteri. . . . But by far the most common site for the origin of small vesicular polypi, is the interior of the cervix uteri. . . . These cervical vesicular polypi are generally of a small size, like a pea or orange pip, and vary from this to the size of a hazel-nut. Sometimes they are sessile and sometimes pediculated; occasionally they are single, or they form a single complex cluster; but more frequently they are gregarious. Indeed, it is, I believe, the rule rather than the exception to it, that when we find one

(perhaps protruding at the os uteri), we shall find on further search that there are others, sometimes the number of four, five, or six, springing from other points of the interior of the cervix, and not discoverable until the cavity is dilated by a sponge tent. When hanging from the os uteri, their stalk is sometimes so loose and long, and the small depending polypus is itself so small and soft, that it moves away before the finger in making a tactile examination, and one unaccustomed to this peculiarity will not feel perfectly sure of the presence of such a polypus till the speculum is used, when the polypous body will be easily seen, generally of a cherry-red or purplish color.

"Occasionally, however, we find, co-existing with these pediculated polypi, others that are non-pediculated, or sessile; and occasionally, after the cervix is dilated, we find others, not yet raised above the level of the general surface of the mucous membrane of the part, but feeling imbedded, like shot or peas, in or beneath that membrane. In other words, we find, in some cases, these vesicular polypi in all these stages of formation, from small shut cysts, up to pediculated vesicular tumors." (*Edinburgh Monthly Journal of Medical Science*, January, 1850.)

These little polypi have been also accurately described, under the name of mucous polypi, by G. Herbiniaux, 1771.

Whether the little vegetations which are occasionally found to fringe the os uteri, have any connection with the vesicular polypi just mentioned, is uncertain. In some instances they have appeared to be merely folds of loose mucous membrane, and I am much inclined to think that the rare species of polypus described by Dr. Oldham has had its origin in this way.

The only effectual treatment for polypus consists in the removal of it. For this purpose different methods have been recommended: for the larger ones I prefer the ligature as the only safe means; for, although they may frequently be removed much more expeditiously by the scissors, yet, occasionally it will be attended with considerable bleeding, and even dangerous hemorrhage.

Like the hemorrhage from partially separated placenta, that which occurs from a large polypus after it has passed through the os uteri into the vagina, is from the venous, or returning circulation of the tumor, not from its nutrient arteries. The os uteri has now contracted round the stalk of the polypus, like a ligature; it, therefore, rapidly swells, from the obstruction to its returning circulation. The veins upon its surface, which is covered by an expansion of the lining membrane of the uterus, become turgid and greatly increased in size, and when they give way, are capable of bleeding to a great extent. The ligature, if applied with sufficient tightness, cuts off the circulation as quickly as the scissors would, and arrests all further hemorrhage.

"The cure of the polypus of the uterus (says Dr. Gooch) affords one of the most striking instances of the triumph of our art."

The improvement of our means for applying a ligature in these cases—for which we are mainly indebted to Dr. Gooch, renders it an operation of great ease and simplicity; and, since his death, some useful additions have added to its value.

Dr. Gooch's "double canula," as it has been called, "consists of two silver tubes, each eight inches long, perfectly straight, separate from each other, and open at both ends; a long ligature, consisting of strong whipcord, is to be passed up the one tube and down the other, so that the middle of the ligature passes across from the upper end of one tube to the upper end of the other, and the two ends of the ligature hang out at the lower ends. The tubes are now to be placed side by side, and, guided by the finger, are to be passed up the vagina, along the polypus, till their upper ends reach that part of the stalk round which the ligature is to be applied; and now the tubes are to be separated, and while one is fixed, the other is to be passed quite round the polypus, till it arrives again at its fellow tube, and touches it. It is obvious that a loop of the ligature will thus encircle the stalk. The two tubes are now to be joined, so as to make them form one instrument; for this purpose, two

rings, joined by their edges, and just large enough to slip over the two tubes, are to be passed up till they reach the upper ends of the tubes, which they bind together immovably. Two similar rings, connected with the upper by a long rod, are slipped over the lower ends of the tubes, so as to bind them in like manner; thus, these tubes, which, at the beginning of the operation, were separate, are now fixed together as one instrument. By drawing the ends of the ligatures out at the lower external ends of the tubes, and then twisting and tying them on a lower part of the instrument, which projects from the lower rings, the loop round the stalk is thereby tightened, and, like a silk thread round a wart, causes it to die, and fall off." (*On the more Important Diseases of Women.*)

If the polypus is of considerable size, I find great advantage in using, instead of a straight one, an instrument which is curved at its upper third. It will be easily understood, that a straight tube is not well adapted to pass up along the side of a globular mass, which is inclosed by soft parts forming a corresponding concavity around it; still less is it fitted to pass round such a tumor so as to meet its fellow on the other side: the ends of the tubes impinge against the soft parts, causing much pain to the patient, and rendering it very difficult to slip them round the polypus. A curved tube obviates this difficulty; it slides up along the convex surface of the mass, and if a mark be affixed to the lower end of each tube (like the sight upon a gun-barrel), we shall not only bring the tubes together, so that their curves correspond, but by moving each tube round the tumor, with its convexity forwards, we shall facilitate the paying out of the ligature from the upper ends. The winch, recommended by Gräfe, is also a great improvement: the tightening can be repeated much oftener, and to a far greater extent, than by merely tying it to the silver bows at the lower end.¹

¹ A variety of ligatures have been recommended. Silk rots through much sooner than hemp; a cord of a single strand, like a miniature bowstring, is not only strongest, but passes out from the tubes with great ease.

The great point in tying a ligature, is not to apply it too high up the stalk of the polypus, lest we include some of the uterine fibres also. This will be easily known by the pain we produce on tightening it; by this pain rapidly increasing, and being followed by vomiting, cold sweats, anxiety, fainting, &c., or by symptoms of inflammation of the abdomen. It is particularly necessary to bear this in mind with all large polypi, because, as these generally arise from the fundus, they drag it down, especially when they pass through the os uteri into the vagina, and invert the uterus more or less. Moreover, the origin of the stalk is usually beyond the reach of the finger, and even if it were not, we could scarcely distinguish the precise spot where the polypus ceases and the uterus commences. Dr. Gooch's rule to avoid tying the polypus high up is very valuable; the vitality of these growths is feeble and easily destroyed—they "die above as well as below the ligature," so that the portion of the stalk which is left "does not grow again, but, like a remnant of the umbilical cord, it dies and falls away."

The time required for the ligature to cut through, depends on the size and hardness of the portion it encircles, varying from two days to two weeks. When the polypus is of considerable size, it will begin to soften in the course of twenty-four or thirty-six hours; it gradually shrinks into a flabby, semi-putrid mass, so that by the time it is separated, it becomes much smaller than before it was tied. In some cases, however, especially when the polypus consists of a hard nodule of fibrous tumor, it retains its firmness and size, so that when the ligature comes away, if it be large, it will remain in the vagina, requiring powerful bearing-down efforts, as in labor, to expel it, and sometimes even instrumental assistance.

A polypoid mass of malignant growth is generally considered as unfitted for the ligature; but, having treated many cases of malignant disease in this manner with good effect, I can affirm that it is not only safe, but capable of producing great relief to the patient. I deny that

this relief being necessarily only of a temporary character is a contraindication to the use of the ligature; and in many inveterate cases of fungoid uterine disease I have had reason to be thankful that such a means was in my power for lessening the constant discharge, the frequent hemorrhages, and severe sufferings of the patient (although I was well aware that it was but for a while), and that she has thus gained a few weeks more of ease and comparatively improved health. Hence, I have never hesitated, in every case of malignant uterine disease, to apply a ligature, if the shape of the tumor rendered it possible. A certain amount of relief has always been gained, and in many instances, especially where the mass was large and the ligature applied for the first time, the patient was so entirely freed from the noisome discharge which kept her in continued discomfort and from the attendant sufferings, that her health began for a while to improve rapidly, and she almost ventured to hope she would recover. Although Levret has made an indistinct remark, by which he appears to recommend that we should apply the ligature to all polypus-shaped growths, whether of a fungoid structure or not (p. 15), Dr. Gooch seems to be the only author, as far as I am aware, who distinctly advocates removing portions of malignant disease, wherever it assumes a shape fitted for the application of the ligature. "In all these cases of fungous excrescence in the vagina, the best practical rule I believe to be this: whenever the form of the excrescence is such that the whole can be removed by a ligature, without including any portion of the uterus, apply it, distinctly stating to the patient, or her friends, that it is not done with the same confidence of success as in a common polypus, but as the only remedy which gives the patient any chance of life, and, if it again fails by the excrescence growing again, it does not render the case worse than it was before." (*Op. cit.*, p. 307.)

Medullary sarcoma, except in the form of fungus hæmatodes, occasionally assumes a polypoid form when seated in the uterus; the latter scarcely ever projects into the vagina without becoming more or less elongated, accord-

ing to the shape of the canal; moreover, its growth is slow, and when it assumes a polypoid form, it is much firmer than the fungus hæmatodes. The larger masses of fungoid disease, which grow from the os and inner surface of the cervix, are usually cases of medullary sarcoma; it occasionally implicates the entire edge of the os, gradually forming a cylindrical mass, with a central tubular cavity, communicating with that of the uterus. I presume that the cylindrical polypus described by Dr. Gooch was of this character.

With regard to the treatment of the mucous or vesicular polypi of the os and cervix uteri, it will entirely depend upon their size and situation. Whenever these project sufficiently for the scissors to take hold, they may be speedily and safely removed, whether furnished with pedicles or merely forming a fringe of vegetations around the os uteri. Long slender scissors, curved at the end like tonsil scissors, may be passed up the speculum, and the operation easily performed. The mere touch of the finger will not suffice; their lightness and extreme mobility render them very difficult to fix without the aid of the eye. It is desirable to apply the argenti nitras freely round the os uteri, and even into the canal of the cervix—not only to stop any amount of bleeding, but to destroy those smaller growths which the scissors cannot touch. The vesicular growths described by Professor Simpson may be sometimes removed with a tolerably long nail, or some little instrument for the purpose, as proposed by Dr. Locock, or by a free application of the caustic, so as radically to destroy them.

CHAPTER XII.

FIBROUS TUMOR OF THE UTERUS.

THE preceding chapters of this work have been devoted to the description and treatment of the functional derangements to which the uterine system is liable. I now pass on to the consideration of these structural changes which are observed to take place in the uterus and its appendages.

Of these the *fibrous tumor*, as being the most common and least dangerous, will claim attention first. It has been, and is still, known under a great variety of names. It is the *fleshy tubercle* of Dr. Baillie; the *subcartilaginous tumor* of Dr. Hooper, in his work on *The Morbid Anatomy of the Uterus*.

Fibrous tumor is, essentially, a non-malignant disease, "yet," as Mr. Paget observes, "there seems to be exceptions to this rule; for, occasionally tumors are found, in which both general and microscopic characters exactly resemble, I believe, the ordinary fibrous tumors;" "but which differ from them, in that they recur once or more after removal, and form not only in their first locality, but in internal parts remote from it. To these, till their characters are more perfectly known, I would give the name of *malignant fibrous tumors*." (*Lectures on Surgical Pathology*, vol. ii. p. 150.) In those few cases which I have seen where fibrous tumor of the uterus has appeared to assume a malignant character, I have suspected the complication with it of colloid disease; but not having had the opportunity of examining them after death, I merely throw out the remark to be accepted or rejected by future observation.

Fibrous tumor of the uterus occurs under two very different conditions; either where the fibrous tissue of

the tumor is continuous with that of the uterus, or where it forms an isolated mass more or less imbedded in its parietes. In the first it is met with from a mere local hypertrophy of the uterine wall (usually the posterior one) to a large solid mass of several pounds in weight. The other and more common species occurs under a great variety of forms; from isolated portions so small as almost to deserve the name of granules, to solid tumors of great size and weight, conglomerated into a mass which equals, and occasionally even exceeds, the gravid uterus at the full term of pregnancy. These isolated fibrous tumors are usually much harder than those of the other species, which preserve more or less elasticity to the feel, even when they have attained a considerable size; whereas the others, from an early period of their growth, present a cartilaginous degree of hardness, which is occasionally increased still further by the deposition of calcareous matter.

The structure of these isolated fibrous tumors is not intermingled with that of the uterus. It forms a hard solid mass, imbedded in healthy uterine structure, covered with a white layer of fibro-cellular tissue, and apparently connected with the surrounding parts merely by nutrient vessels. The structure of the tumor when cut into is hard, white or grayish white, with lines of a whiter and harder substance intersecting it, usually forming irregular segments of circles, at times also taking an irregular form and direction. The hard white structure of which these lines are composed, appears to consist of nearly pure fibrous tissue; the grayer-colored softer portions between them, which form the bulk of the tumor, consist also of a more loosely arranged fibrous tissue with plain muscular fibres, similar to those of the uterus itself, more or less abundantly intermingled.

These tumors vary greatly, not only in their size, but also in their connection with the uterus. Sometimes they are imbedded in the wall of the uterus, at others they project externally, and seem to be covered over with little else than the peritoneum, by which they are attached to the uterus, or internally by the lining membrane of

the uterine cavity, which in some cases yields more or less, so that the tumor becomes polypoid, the pedicle being formed by the membrane which invests it, and the nutrient vessels which supply it. If the mass is of that species the structure of which is continuous with that of the uterus, it usually occupies the posterior wall, bulging out backwards, and pushing the os and cervix uteri considerably forwards. When a fibrous tumor occupies the lower part of the uterus, the cervix becomes shortened as the mass increases in size, so that at length the whole pelvic cavity is either filled up, or, if it be above the brim, roofed by the gradual increase of the indurated structure.

The uterine sound shows that the cavity of the uterus is becoming elongated, and more or less altered in its direction. Thus, it will perhaps pass up for a couple of inches in one direction, then turn, and, as it were, enter another chamber, to the distance of another inch, and again change its course, and ascend to a considerable height in another direction.

The structure of the uterus seems but little altered, except that its walls become thickened, and its fibres more developed and fasciculated. If, however, the mass be of great extent, the uterine fibres become so spread over it as to be scarcely distinguishable.

On making a section of these large masses, we not unfrequently meet with considerable deposits of phosphatous and calcareous matter, and small tumors are thus occasionally met with, assuming an osteomatous appearance. The centre of these fibrous tumors, when they have attained a considerable size, consists of broad bands of a hard, dense, white substance, having the appearance of cartilage, but still fibrous in structure, and its quantity seems to be in proportion to the size and age of the tumor. This condition is chiefly observed in the isolated form of fibrous tumor. "These," as Mr. Paget observes, "are the hardest and least vascular of the fibrous tumors; usually, too, they are spherical." (*Op. cit.*, vol. ii. p. 134.) The conglomerate masses of fibrous tumor are all of the isolated form, being merely connected by interstitial cellular

tissue. The hardness of these tumors varies considerably, not only in different tumors, but also in the same tumor at different times. The larger ones appear to vary, in point of hardness, more than those which are smaller, especially if these latter ones have existed for some time. The permanently hard tumors have but a small amount of vascularity in their substance; their bloodvessels are chiefly confined to those which are distributed on their surface, and these are sometimes of considerable size. As large fibrous tumors mostly consist of several nodules united together by interstitial cellular tissue, it is in this that the vessels take their course; and it is to the variations in point of vascularity which these structures undergo at different times that we may attribute the changes as to size and hardness which these tumors occasionally present. Thus, a large fibrous tumor will at one time feel like a solid mass, at another it will evidently consist of several distinct portions, which admit of a slight motion upon each other.

Besides the varieties just mentioned, we occasionally meet with cavities of a cystic formation in fibrous tumors. "The formation of cysts," says Mr. Paget, "is not rare in fibrous tumors, especially in such as are more than usually loose-textured. It may be due to a local softening and liquefaction of part of the tumor, with effusion of fluid in the affected part, or to an accumulation of fluid in the interspaces of the intersecting bands; and these are the probable modes of formation of the roughly bounded cavities that may be found in uterine tumors. But in other cases, and especially in those in which the cysts are of a smaller size, and have smooth and polished internal surfaces, it is more probable that their production depends on a process of cyst-formation, corresponding with that traced in the cystic disease of the breast and other organs. The whole subject, however, in relation to the origin of the cysts needs further consideration." (*Op. cit.*, vol. ii. p. 137.)

These cysts are, I believe, chiefly found in the "continuous" form of fibrous tumor, and have sometimes attained such considerable size as to be mistaken for

ovarian disease, so that the cyst has been tapped, and a large quantity of fluid drawn off.

The early symptoms of fibrous tumor are very obscure, and frequently, at first, quite inappreciable; indeed, it is by no means uncommon to meet with cases where it has already attained a great size without any serious derangement of health. In some it has been mistaken for pregnancy, for extra-uterine pregnancy, and even ovarian disease, when cysts are developed in their interior. When small, the disease is occasionally met with on examination after death from other causes, where no suspicion of its presence has existed during life.

In this passive state the symptoms will be chiefly those arising from the gradual pressure upon, and displacement of, the adjacent organs, as also of the uterus itself. There are frequent calls to relieve the bladder and rectum. If, from constipation, &c., the bowels have become loaded, the mass will probably be pushed down, the bladder pressed upon, and more or less difficulty experienced in evacuating it; difficulty will also attend the passage of solid feces through that part of the rectum which is flattened by the mass. It is in these cases that the uterine sound proves so invaluable; we can not only determine that the cavity of the uterus is already longer than natural, but if the disease be commencing in the posterior wall, as is usually the case, the finger, per rectum, while the sound is in the uterus, will readily detect any increase of thickness and firmness at this part. From the absence, however, of symptoms which attend the incipient stage of fibrous tumor, we have not often an opportunity of examining it at this period.

In some instances, the patient, without any peculiar suffering or derangement, has gradually become aware of a hard tumor above the brim of the pelvis; in others, she has suffered for some time from symptoms which evidently resulted from the pressure of some hard body in the cavity of the pelvis. After a while, these symptoms have disappeared suddenly, and a solid, but movable tumor has all at once been detected in the lower part of the abdomen. In other words, the mass, which

had commenced in the pelvic cavity, and had more or less compressed the bladder and rectum, has risen above the brim into the cavity of the abdomen. The varieties in this respect are very great; sometimes it attains a very considerable size, without quitting the pelvic cavity, so that nothing can be felt through the abdominal parietes, while upon internal examination the pelvis is so filled with the tumor, that the wonder is, how the bladder and rectum can perform their duties. In other cases, the first traces of the tumor, as felt through the abdominal parietes, will be detected high up above the symphysis pubis, and apparently having no connection with the pelvis, while with the sound we ascertain that the uterine mass rises high into the abdominal cavity, from the upper and anterior part of which springs the nodule of fibrous growth which had first attracted the patient's attention.

When the mass is situated in the upper part of the uterus, it is capable of displacing this organ to a considerable extent, producing retroversion or anteversion, with the symptoms which are commonly the result of these displacements. In other cases, the pain or inconvenience is not merely referable to the pressure upon, or displacement of, the pelvic viscera produced by the tumor, but there is severe pain, of a throbbing, darting character, greatly increased by external pressure or internal examination; and particularly so on the introduction of the sound. If the tumor can be reached by the finger, per vaginam, throbbing vessels may be felt upon its surface.

The effects of fibrous tumor upon the menstruation are so various as to afford little assistance in the way of diagnosis. Occasionally, the catamenia are sparing, irregular, and altered in appearance; sometimes they are so profuse as to amount to severe menorrhagia, at others, they are entirely absent for a considerable period, and occasionally no change at all is perceived.

The growth of these tumors is usually slow, although by no means uniform; in some cases it is much more rapid; and this different rate of growth varies consider-

ably in the same individual, at different times. With the increasing size of the mass fresh symptoms arise, which had not existed before—such as cramp in the lower extremities, numbness of one thigh, and œdema of the feet. The difficulty of relieving the bladder and rectum has probably also increased; the chylopoietic system is much deranged; nervous irritation is set up; the tongue, which is generally rough and red, becomes glazed and fissured; emaciation follows, and the patient gradually dies cachectic.

As regards the treatment, I believe that Sir C. M. Clarke first distinctly pointed out the important fact that these tumors occasionally undergo diminution of size, and even disappear. "The case which follows proves, beyond a doubt, that the tumor designated fleshy tubercle may be absorbed naturally, and if so, it is by no means improbable that the curative process may be forwarded by a recourse to those measures with which art is furnished. A lady had labored for some time under a very profuse discharge of blood from the vagina. Upon an examination, a tumor, consisting of several irregular portions, was found descending into the vagina from the cavity of the uterus. A large tumor, as big as a child's head, could be felt through the parietes of the abdomen, just above the pubes. Upon the surface of this tumor could be felt two smaller projections, one of which was the size of a man's fist, and the other twice this size. A variety of means were employed for the relief of this case, for about two years; upon examining the abdomen at the end of this period, the tumors could not be discovered. At length, the patient, worn out by pain and by discharge, died. Her body was examined in the presence of Sir Walter Farquhar, Mr. Chilver, and Dr. Clarke. The uterus was found as large as that of a woman at the end of the fifth month of pregnancy. Upon the anterior part of it, near the fundus, were found two small tumors as large as peas, which were probably the same tumors before felt, of the size above mentioned, as there was no other vestige of them. These tumors were of a hard, resisting nature, and were lying between the muscular

part of the uterus and the peritoneal covering of it." (*On the Diseases of Females*, Part I. p. 287, 3d edit.)

A somewhat similar case came under my notice some years ago at St. Bartholomew's Hospital, where two large masses, having all the characters of fibrous tumor, could be felt through the abdominal parietes, the one immediately behind and above the symphysis pubis, and evidently arising from, or seated in, the uterus; the other above it, and extending nearly, or up to, the umbilicus. She was suffering severely from an attack of pelvic inflammation, with great excitement of the circulation; six leeches were applied, per vaginam, to the most painful spot, and a profuse hemorrhage followed, which could not be stopped until she had lost a large quantity of blood; the flushed face had become pale, the hard throbbing pulse soft and feeble. In a week the lower tumor had evidently become softer and smaller, and in the course of a month could be no longer felt. The other one had also undergone similar changes, but in less degree; and in about six or eight weeks more, disappeared also. Guided by these interesting results, I tried the effects of repeated applications of leeches, and in some cases with excellent results, the tumor being diminished both in size and hardness. In others, especially the very hard globular ones, no effect appeared to be produced. For another valuable local application, viz., the strong mercurial ointment, I am indebted to the suggestion of Professor Simpson. Like the leeches, its effects have varied exceedingly, and this has appeared chiefly to depend on the very different degrees of absorbing power in different individuals. Thus, from 3ij to 3ss have been thoroughly melted upon the os and cervix uteri, and confined there by a firm wad of lint for twelve or eighteen hours; in some cases the lint has returned with the ointment upon it but little diminished; whereas, in others it has entirely disappeared.¹ There is no doubt

¹ In applying an ointment to the os uteri the great object is, that it should be sufficiently hard to pass up the vagina without sticking to the sides of this canal, and yet readily melting when warmed by the

that in many cases a very considerable softening and diminution of the mass have been effected by these two means, and in some few the tumor has disappeared entirely.

It was in the early part of 1846 that I was induced to make a trial of the chloride of calcium. I soon found that if commenced in ʒss doses of the solution twice a day, in infus. aurant. co., the patient could gradually increase it until she had reached ʒj without inconvenience; after continuing at this dose for a month, she left it off for a few weeks, and again resumed it as before: a decided change was observable in several cases. In 1853 my attention was drawn to the remarkable effects of the Kreuznach waters, by an interesting essay on their use in these affections, by Dr. Oscar Prieger, of that place; his remarks are deserving of the more attention, having been founded on the results of a very considerable number of cases which have come under his observation. The mineral water is taken internally to a certain extent, but its chief use is in the form of baths, fomentations, and injections, which are frequently rendered stronger by the addition of the saline constituents of the Kreuznach water, evaporated down to a thick consistence, or to the state of a dry crystalline powder. In using it externally, in the form of fomentation, Dr. Prieger has found the spongopiline of the London hospitals of great assistance. He considers that the more immediately beneath the abdominal parietes the mass lies, the more readily is it brought under the influence of the agent. He states also that,

surrounding parts. The common ung. hydrarg. is too soft for this purpose; and attempting to pass it up the speculum does not succeed well, for it is apt to smear about the instrument, and come away with it when withdrawn. Rendering it hard with wax prevents it from melting readily, and increases its adhesive qualities. The pure hard tallow of a mould candle is best; it possesses the requisite hardness, does not adhere in passing it through the os externum, and melts rapidly when applied to the os uteri, for which purpose it should be passed round the cervix by the finger until it is quite liquefied. The "ung. hydr. durum," prepared for this purpose by Mr. Hooper, has answered completely.

¹ *Medical Times*, 1846; April 18; May 2, 23; June 13; July 4 and 11.

after the use of a number of baths and applications, a considerable increase of vascular action and general tenderness is observed in the mass, with a corresponding increase of the various symptoms arising from its pressure on the surrounding parts. Dr. Prieger confirms the fact to which I have already alluded, viz., that in large conglomerate tumors, which at first appear to consist of one solid mass, as the process of absorption proceeds, they appear to separate into a number of distinct masses, which become more or less movable upon each other.

Since the publication of Dr. O. Prieger, I have used an artificial preparation of Kreuznach water, and occasionally increased its efficacy by adding from two to five grains of bromide of potassium, which appears to be an active agent in this mineral water. In many cases, the results have been very successful; in some, where this artificial mineral water formed the sole treatment; in others, where it was combined with the local application of leeches and mercurial ointment, as above described.

The position and form of a fibrous tumor occasionally afford an opportunity either of removing it entirely, or so far altering its position, as to relieve the patient of many of her more urgent symptoms. I have already pointed out the fact that when an isolated fibrous tumor is situated in the parietes of the uterus, near to the inner surface of this organ, it is occasionally pushed into the uterine cavity, to which it is now connected only by a pedicle of the mucous membrane which covers it. Hence it is that uterine polypi are not uncommonly met with, the structure of which shows them to be of this character. Cases have every now and then occurred where the uterine fibres surrounding larger masses have gradually separated with its increasing growth, and have pushed it through into the uterine cavity; expulsive pains have brought it down, and it has either been removed by ligature, like a polypus, or, where the separation, or "enucleation," as it has been called, has been completed by the hand of the medical man, or with such instrumental aid as the particular case at the moment might seem to require. The distinction between

the *continuous* and the *isolated* form of fibrous tumor, which I pointed out at the commencement of this chapter, becomes of great practical importance in deciding the question whether a fibrous tumor be capable or not of artificial removal; it must be self-evident that any operation for this object must refer chiefly, if not solely, to the isolated form of tumor.

We are indebted to Professor Simpson for some interesting observations on this subject. Reasoning on the contractile power which the uterus is capable of exerting, in separating a fibrous tumor from the part in which it is imbedded and pushing it into the uterine cavity, he proposed to form an artificial opening with caustic potass in the layer of uterine tissue which covered the lower part of the tumor, through which the mass might be artificially separated from its attachments, and thus expelled. In the case in which he tried this mode of treatment, he "found, on examination, a large fibrous tumor imbedded in the back wall of the uterus, and which protruded downwards upon the top of the vagina in a rounded form, the os uteri and uterine cavity lying in front of it." An opening was made "by means of caustic potass into the most prominent part of the tumor, about one inch behind the os uteri." The connection between the mass and the surrounding uterine tissue appeared to be very slight. "Two days after the caustic was used, Dr. Simpson found the artificial opening enlarging like the os uteri in labor, and the tumor beginning to protrude through it. It opened up gradually, the patient taking some ergot, and on the fifth day a large piece of the tumor was found pushed low down in the vagina, while the edge of the uterine wall could barely be felt encircling it, like the rim of the os uteri when fully dilated. The abdominal tumor had subsided considerably. On the eighth day, Dr. Simpson attempted to pass a ligature round the mass, but found it could not possibly be made to include but a very small portion. He separated, however, and brought away a small fragment, not without giving a good deal of pain. The tumor now gradually and more completely filled the

vagina. The uterus, however, seemed unable to throw it off entirely, and the patient was getting exhausted, from the quantity of the discharge, which was very fetid and offensive. On the twelfth day, Dr. Simpson, while she was completely under the influence of chloroform, passed up his hand by the side of the tumor, completed the separation of the remaining adhesion (like an adherent placenta), and brought away the tumor in one mass. This was done in a very few minutes. The patient woke up quite quietly, said she felt no pain whatever, nor did she complain at all of pain in the region of the uterus subsequently. She proceeded very well for the first three days, her pulse not above 80, when, in consequence of the nurse taking unwarrantable liberties with her, in making her get out of bed, washing, &c., she was seized with rigors, followed by severe sore throat, and irritative fever. This completely exhausted her remaining strength, and she died six days after the tumor was removed." (*Transactions of the Obstetric Society of Edinburgh*, December 22, 1847.)

Cases have now and then occurred where fibrous tumors of very considerable size have been forced down by the expulsive action of the uterus, the connecting pedicle divided by ligature, or other means, and the mass removed. I have recorded an interesting case of this sort (*Medical Times and Gazette*, April 28, 1855), which was removed by Dr. Copeman, of Norwich.¹ A still more remarkable case occurred under my own care. (*Op. cit.*, Sept. 8, 1855.) The abdomen was as large as in the seventh month of pregnancy, although of a different form, being more globular and very solid; the lower portion of the mass was found pressing down upon the perineum, accompanied with severe pelvic suffering, bearing-down pains, fetid discharge, &c. &c. The whole mass was far too large to bring at once down into the pelvis, but as each successive portion died and became

¹ See also an interesting case by Mr. Teale, of the Leeds Infirmary, where a fibrous tumor was removed from the cervix uteri by enucleation.

soft, it was forced through the brim, and filled the cavity of the pelvis, where it was removed in the ordinary manner by ligature. In this way between thirty-five and forty pounds were brought away by successive applications of the ligature; the tumor disappeared, and the uterus, with more or less *débris* of the original mass adhering to its internal surface, again returned into the cavity of the pelvis. The patient has recovered her health and strength. Like polypi, these tumors die occasionally, becoming soft from below upwards, and if not removed or detached, slowly dissolve away by a process of decomposition.

A remarkable case has been recorded by Dr. Atlee, in the *American Journal of Medical Science*, where a fibrous tumor of considerable size was successfully removed from the peritoneal surface of the uterus by an incision through the abdominal parietes. The operation, though skilfully performed, was one of great danger, resembling in many points the Cæsarean operation. The position, form, size, and connection of the tumor must be peculiarly favorable to render such an operation possible, and even then it would only be justifiable if accompanied with symptoms of the most urgent character.

A temporary means of relief in some cases of fibrous tumor was first pointed out by Sir Charles M. Clarke, viz., by pushing the mass out of the pelvic into the abdominal cavity. "If the hollow of the sacrum should be filled by the tumor, and the rectum be compressed, advantage may arise from the introduction of a finger into the gut, by means of which, assisted, if necessary, by another in the vagina, the tumor may be very gently pushed up above the projecting angle of the sacrum. If this should succeed, it will immediately relieve all the symptoms, and the tumor being once in the cavity of the abdomen, will probably no more descend into the pelvis. No violence should be used in making this attempt." (Clarke *On Diseases of Females*, Part I. p. 289.) The possibility of this occurrence will also depend entirely upon the form, size, and attachment of the mass, and there is no doubt, that by raising it out of the pelvic into the

abdominal cavity, we instantly relieve the patient of all those symptoms which had arisen from the pressure of the pelvis; the obstruction to the evacuation of the rectum and bladder ceases—the bladder can now retain more urine, without producing painful urging to empty it—the cramps of the thighs and cedema of legs disappear, &c., but unfortunately, the favorable circumstances necessary for this change to be effected rarely happen sufficiently in conjunction for us to avail ourselves of them. They have occurred to me two or three times: in one it succeeded at once; she lost all her former sufferings and annoyances, and was immediately aware of a solid movable mass above the symphysis pubis. In another, it could be pushed out of the pelvis, and back again, without the smallest pain or difficulty—(see *Medical Times*, July 11, 1846), but in after years, as it increased in size, it continued above the pelvic brim.

CHAPTER XIII.

MALIGNANT DISEASES OF THE UTERUS— CANCER.

AMONG the improvements and changes which have been effected by modern pathology, few are more remarkable than those which our knowledge has undergone during the last few years, as regards the malignant diseases of the uterus. That form of disease to which the term "cancer of the uterus" was almost exclusively appropriated, viz., "*scirrhus*," or "hard cancer," is now satisfactorily proved by the extensive researches of Rokitsky and others, to be of exceeding rarity; whereas "*cephaloma*," the "soft," or "white cancer," the "medullary sarcoma," or "brain-like tumor" of Mr. Abernethy, which was formerly looked upon as rather a variety of the disease, is now recognized as that form of cancer which most

frequently affects the uterus, and to which the term "cancer of the uterus" more especially refers.

Of the various species of cancer which have been described by pathological writers, the two forms which are said to be of most frequent occurrence are—

First—*Cephaloma*, with its variety, hæmatoma, or fungus hæmatodes.

Second—*Epithelioma*, or epithelial cancer; a polypoid outgrowth of which from the os uteri constitutes the *cauliflower excrescence of the os uteri*, described by Dr. John and Sir Charles Clarke.

Two others are stated to occur so rarely that their existence in the uterus has been almost doubted, viz., thirdly—the *colloid* or alveolar cancer. A peculiar granular form of this disease has been observed upon the surface of the uterine cavity; and Dr. West is of opinion that he has twice met with this form of the disease, and in one case had the opportunity of proving it by examination after death. I confess I have not met with colloid disease in the uterus, unless in two or three cases where it was complicated with fibrous tumor. Colloid growth, therefore, at all events, is of great rarity as a uterine disease, whereas in the ovary my own observations lead me to the conclusion that a form of it occurs much more frequently than has been hitherto suspected.

Fourth—*Scirrhus*, or hard cancer.¹

¹ I have noticed scirrhus, or hard cancer, as a disease in the uterus of occasional or even doubtful occurrence, in obedience to the high authority of Rokitansky and other eminent morbid anatomists; but I must not let this opportunity pass by of recording my conviction that destructive cancerous disease of the uterus does not always exhibit, either in the first or second stage, the characters which are assigned to cephaloma only; and if these characters be not those of scirrhus, they, at any rate, resemble them more than those of cephaloma. The greater hardness and tenderness of the os and cervix in the early stage, the more acute and severely marked lancinating pains, the hard solid growth, which, when cut into, presents a fibrous mottled appearance, very different to the healthy structure of the uterus, and still more to a section of cephalomatous disease, justifies, I think, this remark. "The substance of a scirrhous uterus," says Dr. Baillie, "is thick and hard, and when its structure is examined, it shows a whitish firm substance, intersected generally by strong membranous divisions."

In a work which professes to be merely a practical treatise on the diseases of women, it would be out of place to enter fully into the morbid anatomy of these malignant growths, or even to offer a digest of the best researches in modern times on these subjects; I must refer to the extensive investigations of Professor Rokitansky, and also to the works of Dr. Walshe and Mr. Paget.

The definition which has been given by Müller in his work on cancer, and quoted by Dr. West, is by far the best with which I am acquainted; it not only points out the destructive character of the local affection, but also the important fact that it is a constitutional disease with which the whole system is deeply tainted. He defines those growths to be cancerous, "which destroy the natural

This is not a description of any form of cephaloma with which I am acquainted; it is one of an entirely different structure, closely corresponding to that of scirrhus. It is difficult to suppose that this experienced anatomist, even though unassisted by the advantages which the microscopes of the present day afford, could have mistaken the appearances which cephaloma presents in its early stage for those of scirrhus.

It is acknowledged by every writer on these subjects, that the opportunities of examining uterine cancer in its early stages are exceedingly rare. For my own part, as regards cephaloma, I have not had an opportunity of examining this disease at an earlier stage than where the thickened wall of the uterus had been converted into a hard, dark yellow, *solanoid* mass. But this is essentially different to the fibrous and marbled appearance which is seen in other cases, where with the unassisted eye, we find no traces of the characters of cephaloma; and, moreover, where after extensive destruction of the lower half of the uterus, we find the remaining portion of the uterine walls still exhibiting the same acicular lines of pale white ligamentous or fibrous tissue up to the very edge of the ragged surface which is being destroyed by the process of phagedenic ulceration, which is very different to the brain-like process of softening, which is seen in cephaloma.

It is a matter of indifference to me whether the form of malignant uterine disease which I have just pointed out goes by one name or another, but I am anxious to record my conviction that it is very different to ordinary uterine cephaloma, and ought not to be confounded with it.

In spite of the prodigious number of post-mortem examinations, the results of which have been published by various distinguished observers, we possess scarcely any dissections of uterine cancer in its very early stages. I would, therefore, with great deference, suggest that this new view respecting the rarity, or non-existence of scirrhus as a uterine disease, requires further confirmation.

structure of all tissues, which are constitutional from their very commencement, or become so in the process of their development, and which when once they have infected the constitution, if extirpated, invariably return, and conduct the person who is affected by them to inevitable destruction."

The term *medullary cancer*, or *cephaloma*, has been applied to that form which most frequently attacks the uterus, from the brain-like appearance which the soft variety of the disease presents. "The material composing these cancers (when not disordered by the effects of hemorrhage, inflammation, or other disease), is a peculiar, soft, close-textured substance, having very little toughness, easily crushed, and spread out by compression with the fingers. It is very often truly brain-like, most like foetal brain, or like adult brain partially decomposed and crushed. Many specimens, however, are much softer than brain; and many, though of nearly the consistence of brain, are unlike it, being grumous, pulpy, shreddy, or spongy, like a placenta, with fine, soft filaments." (Paget, *op. citat.*, vol. ii. p. 259.)

The researches of modern pathologists show that this brain-like substance is contained in a delicate cellular tissue or stroma; that "vessels may be traced from the cellular membrane surrounding the growth generally, or from the peduncle of a tumor (when its attachment to the surrounding tissues is of this kind), seen to ramify in the stromal substance, and from this to plunge into the contained matter. The latter frequently appears, on a section of the tumor, to be the part most abundantly furnished with vessels"—(Walshe *On Cancer*, p. 14); that in the uterus it occurs either as a distinct tumor, usually assuming a polypoid character, or is deposited, as if by infiltration, throughout the tissue of the organ, the place of which it appears to take.

It is not easy to assign reasons for the different appearances which medullary cancer presents in different patients, or in the same patient at different times: when forming nodular outgrowths it is usually white, and its brain-like resemblance is most strongly marked; when

the whole uterine wall is infiltrated with the medullary deposit it is usually hard; the surface, when cut, is of a pale yellow color, hard, wet, and smooth, so exactly like that of a raw potato as to have received, in some cases, the name of *solanoid*.

"When interstitial hemorrhage leads to sanguineous infiltration of an encephaloid mass, or to irregular accumulations of blood through its substance, and when, especially after ulceration of the integuments, a rapid development of fungating growths takes place from its exposed surface, the diseased formation may be termed *fungus hæmatodes*. The circumstances under which this name is applicable are, however, merely fortuitous, and do not imply any fundamental distinction in the nature of the growth exhibiting them." (Walshe, *op. cit.*, p. 17.)

The morbid anatomy of this disease and its varieties is a subject of great importance, and the elaborate researches of microscopic observers of the present day have added a series of interesting details on its minute and ultimate structure, far too extensive for me to enter upon in a strictly practical work. An accurate knowledge of the characters which the disease presents *during life* is what the professional man must chiefly look to as the guides of his diagnosis and treatment, viz., the symptoms of the patient, as elicited by her own sensations, by her appearance, and the state of her general health; and essentially by the changes in the part itself, as ascertained by vaginal examination.

An accurate diagnosis of this disease in its early stages, would be indeed most desirable; but, from the nature of it, and of the organ which it involves, a medical man has seldom the opportunity of examining it at this period; and, even if he had, the symptoms, at the best, are of an obscure and doubtful character. The commencement of the disease usually escapes both the notice of the patient and the practitioner; sometimes even existing for several years without exciting a suspicion of its presence, and easily mistaken for other affections; but, when it does assume its unmistakable characters, it has usually at-

tained such an extent and inveteracy as to set our means of treatment at defiance.

The patient, at first, perceives deep-seated pains in the pelvis, which are neither severe nor lasting, but are generally brought on by sexual intercourse, by the approach of a catamenial period, by evacuation of the bladder or rectum, by rough examination of the abdomen, or per vaginam, and occasionally by certain changes in the weather. By degrees these pains become longer and more severe, and she is now aware of occasional pains of an entirely different and peculiar character, consisting of a sudden sharp burning dart of neuralgic severity; always proceeding from one spot, and sometimes transfixing the whole pelvis; at first, the patient may have had one or two of these *lancinating pains*, as they have been called, and not have any return for weeks, or perhaps months, and then only induced by the same causes which are found to aggravate the other pelvic pains. In some observations on Uterine Gout and Rheumatism (1844), I have made the following remarks: "The nature of these darting, or lancinating pains, as they have been called, is but little understood; they have been, and are, considered by many as peculiar to, and therefore distinguishing, that disease which is commonly called *cancer*." "Darting pains, however, cannot be pronounced to be peculiar to this disease, even in its earliest stage, because we frequently see them of great severity in uterine affections, where no organic disease exists, and especially in these forms of uterine gout and rheumatism. It is true they do not appear until the disease has attained a considerable duration and extent; but it is equally true that they are here quite capable of permanent relief, which could scarcely be the case if they were essentially connected with cancerous disease. It seems more than probable that, in these affections, they partake of a neuralgic character, and are called into action by the sudden paroxysms of congestion which take place in a gouty condition of the part. In this respect they bear a close analogy to the twinge of a gouty foot, or to the darts of excruciating pain in the *tic douloureux*, depending on gouty or dys-

peptic irritation." (*On the Dysmenorrhœa and other Uterine Affections in connection with Derangement of the Assimilating Functions*, p. 49.) Dr. Walshe, who takes a similar view, observes that "the pain has many of the characters of the neuralgiæ, and to this class I believe it unquestionably belongs." (*Op. cit.*, p. 122.)

At about the time when these lancinating pains have made their appearance, we not unfrequently observe the patient to suffer from a sensation of weight, or dragging pain, in the pelvis, or perhaps numbness in one or both thighs, with varicose veins of the part; she complains of scirrhus-like knots in the breasts—that the catamenia have lately become irregular, unhealthy in appearance and odor, and that a greenish watery discharge, which stiffens her linen when dry, continues during the intervals.

In the mean time, a considerable change is gradually taking place in the general appearance of the patient. Besides losing flesh and color, the face assumes a sallow cadaverous hue, which is very peculiar, and is strongly indicative of the mischief which is going on; altogether it more closely resembles the face of a chlorotic girl than anything else. "While the local changes and symptoms advance in connection with the diseased formation, the constitution almost invariably suffers in a marked and peculiar manner. Certain adventitious products possess the property of disturbing, each after its special mode, the phenomena of circulation, nutrition, and innervation, and of producing thereby a depraved condition of the organism; designated by the general term *cachexia*" (Walshe, *op. cit.*, p. 124), literally meaning a bad habit of body. Digestion becomes deranged and enfeebled; the appetite fails. The tongue has a thick coat of rough dirty-white fur upon the dorsum, with the perfectly clean pale wet edge so indicative of organic mischief; as the disease advances it becomes red, sulcated, and glazy, evidently in connection with the condition of the mucous membrane of the bowels at that stage. Nausea and vomiting are occasionally observed; the nights are restless and disturbed from the attacks of pain and fever,

which constantly recur towards evening ; and the patient rapidly loses her strength and flesh. "The nutritive functions become impaired ; the tissues grow soft and flaccid ; the patient loses flesh ; the fat is completely absorbed ; the very skin seems to undergo attenuation, the emaciation proceeding to a state of perfect marasmus, unless when cedema of the cellular membrane interferes with its apparent progress." (Walshe, *op. cit.*, p. 125.)

At length softening of the diseased structure commences, and this process probably first takes place within the os uteri or canal of the cervix, as it is usually here that we first perceive the peculiar soft pulpy structure which, whether it deserves the name of "fungoid granulations" or not, soon becomes a foul sloughing phagedenic ulceration. The greenish watery discharge, to which I have alluded, not only becomes much increased in quantity, but mixed with ill-conditioned pus and mucus, occasionally with blood, and with shred-like ragged portions of putrid slough. The fetid nature of the discharge is a great aggravation to her misery ; when the ulcerated stage begins, the disease assumes its worst features, the symptoms above enumerated are greatly increased, and the attacks of pain are not only of longer duration, and more frequent occurrence, but also of intolerable severity. She experiences an increasing difficulty in evacuating the rectum and bladder, which usually results from an infiltration of cancerous matter into the tissues of these organs, by which their parietes, more especially those of the urethra, become thickened, and the canal more or less narrowed and obstructed. From the increased suffering produced by her sitting up, by her rapid loss of strength, and the never-ceasing, profuse and offensive discharge, she seldom quits the horizontal posture, and soon finds difficulty in moving from her bed to a sofa during the day. Partly from the drain of fluid from the circulation which this discharge produces, and partly from the nausea, vomiting, and severe gastric derangement which usually exist, she is not unfrequently tormented with an insatiable thirst, from which she can find little or no relief.

Having described the train of symptoms and gradual increase of suffering up to the stage of softening and destructive ulceration, I will return for a while to the earlier periods of the disease, and point out the changes of the part as they occur on vaginal examination. The os uteri is large and firm—not peculiarly hard or painful; it is usually open enough to admit the point of the finger—the canal of the cervix gradually contracting up to the os uteri internum; its lips everted. The cervix is short, thick, and mostly harder than in the healthy state; the uterus is evidently enlarged to two or three times its natural size, and as far as the finger can reach, it feels hard and bulky, so that pressure with the other hand above the symphysis pubis will usually detect the fundus, and distinctly jerk down the uterus against the examining finger. At a later stage of the disease, especially when the uterus is becoming fixed and immovable, we commonly feel the fundus inclined to one side of the pelvis, more frequently the right. As the disease advances, the os uteri has increased in size—it is open and soft; the cervix is still hard, and has become shorter and thicker. On passing the finger into the canal of the cervix, the os uteri internum is now sufficiently open to admit the tip of it to enter the uterine cavity; the walls of the uterus in its immediate vicinity feel soft and pulpy, and not unfrequently a congeries of nodular fungoid growths may be reached, which are soft, friable, and readily bleed; occasionally a projecting portion may be detached by the finger, which, on coming away, will disclose the brain-like character of the disease.

In the early stages the uterus is movable; but as it increases in size, and presses on the surrounding soft parts, it becomes fixed to them by extension of the disease; this takes place by infiltration of cephalomatous matter from the uterus into those parts which are in immediate contact with it, so that sooner or later the soft linings of the pelvis, as also the bladder and rectum, are implicated in the disease, and consolidated with the uterus into a mass of cancerous deposit. For the same reason the superincumbent intestines are not unfrequently fixed

to the fundus uteri. This gluing of the uterus to the surrounding soft parts is to a great extent through the medium of the oppressed peritoneal surfaces, and is probably due here to a chronic or subacute inflammatory process; but where the disease has extended to the vagina, bladder, or rectum, it appears first in the cellular or fibrous tissue of these organs, and may be distinctly felt beneath the mucous membrane, which is as yet sound. Under these circumstances the appearance of the disease in these parts can scarcely be attributed to its extension from the uterus, but to fresh and separate formation of medullary matter deposited from the generally tainted system.

The os and cervix uteri may have undergone considerable alterations in point of shape and feel, and yet be covered by apparently healthy mucous membrane; so that if we were to examine these parts with the speculum at this stage, we might put the patient to a good deal of pain; but the eye would detect in the pale, and as yet healthy-looking mucous membrane little of the mischief which is lurking beneath.

In other cases, where cephaloma assumes a polypoid form, we find an irregular mass projecting into the vagina, springing either from the os uteri itself, or from the uterine cavity, and more or less constricted into a pedicle by the compression of the os upon it. In some cases, I have known it spring from the entire circle of the os uteri, forming a thick tubular growth, which has ultimately reached to the os externum. In the polypoid form cephaloma continues hard for a longer time than where it involves the whole uterus. The hemorrhages are less and the discharge usually smaller; so that the patient's chief discomforts are from the pressure of the growth against the urethra and rectum. By degrees, however, the mischief extends to the whole organ; the projecting mass, if not already removed by the ligature, is detached by the sloughing process, comes away in a putrid mass, and discloses the uterus in a far-advanced state of disease.

As the softening process of the second stage advances,

the os uteri becomes larger, softer, and more uneven. Instead of the firm ring which it presented in the early stage, resisting the passage of the finger, the opening is wide and soft, partly from the cervix having almost entirely disappeared, and partly from the destructive process of sloughing and softening, which has now commenced, having rendered the passage wider and more yielding.

If blood has been extravasated into the tissue or stroma of a cephalomatous growth, it forms that modification of the disease which is known by the name of *fungus hæmatodes* or *hæmatoma*. The increase of the mass is usually more rapid in this case—probably owing to the effusion of blood which has taken place into its stroma. For the same reason it usually appears as a fungoid lobular growth, occasionally becoming polypoid when it projects into the vagina. It resembles solidified blood when cut into, and from the very circumstances of its formation, not only is its increase of size more rapid, but the hæmorrhages are more frequent and profuse.

As the softening stage of cephaloma of the uterus advances, and the os uteri becomes more open, and the cervix shorter, the finger can now penetrate with ease into the uterine cavity; and not only do we usually feel it filled with a mass of fungoid lobular growths, but the thickened walls of the organ are becoming softer and more pulpy, and this change quickly extends to the os and cervix uteri, which soon become involved in the disease, and lost in the gradual advance of destructive sloughing. Still we frequently see that, for a while, a small portion of the os uteri will remain apparently unchanged (as far as can be ascertained by the sensation of the finger), when the rest of it is broken down into an indistinguishable pulpy mass, and presents merely a shapeless, sloughy, irregular, fungoid orifice, leading into the uterine cavity.

The feel of these fungoid growths, either at or approaching to the softening stage, is diagnostic: they are soft and brittle—not unlike the pulp of a ripe orange or

peach, in other words, of a delicate stroma, containing a fluid or semi-fluid matter within its septa.

If we examine the anterior wall of the vagina, especially at its upper part, we shall feel thin patches here and there of cephalomatous deposit beneath the mucous membrane, and usually situated about the neck of the bladder. At first they feel like thin slips of cartilage or parchment, but they soon coalesce, become thicker, and from increasing difficulty in passing water, evidently narrow the canal of the urethra more and more. At last it amounts to actual retention of urine, and the daily use of the catheter is required. After a while the water again passes without difficulty, but a little inquiry soon shows that it is no longer under her control; a process of destruction similar to that in the uterus has now commenced in the bladder, which, therefore, can no longer retain its contents.

A similar process sometimes occurs with the rectum; but in this case the communication is not with the vagina, but higher, within the body of the uterus, where the substance of its tissue is much greater, and where the life of the patient is rarely prolonged sufficiently to admit of the destruction of this part. It is as rare to see a communication established between the rectum and uterus, as it is *not* to see one between the bladder and vagina. "Still, however," as Sir C. M. Clarke observes, "this circumstance is now and then met with, and from the moment that it is established, no feces pass through the anus, the external parts forming the channel through which the urine from the bladder, feces from the rectum, and pus from the ulceration are discharged. The stench now becomes intolerable; and the hips of the patient, lying almost always immersed in the excreted matters, the soft parts inflame, and sloughing takes place." (*Op. cit.*, vol. i. p. 214.)

"The constitution possesses no power of compensating for this waste of strength and of substance. The functions of the stomach fail; little food is received, less is digested; and sometimes incessant vomiting takes place, first of the matters usually contained in the stomach, and

afterwards of bile which regurgitates into the stomach from the violent efforts of retching." (Clarke, *op. cit.*, vol. i. p. 215.)

I have quoted largely from this eminent author, because time cannot impair the graphic accuracy of his descriptions. A few years may add much to our knowledge of these diseases, and greatly modify, or perhaps entirely change our rules and mode of treatment; but the symptoms and sufferings which attend their destroying progress will remain the same, and will be a lasting testimony how faithfully he has depicted them.

When we consider the acrid and offensive character of the discharge which flows from the vagina, we shall not be surprised that "the contact of this matter with the cutaneous surface may produce irritation, erythema, and even corrosive ulceration (but not cancerous destruction) of the parts surrounding the ulcer." (Walshe, *op. cit.*, p. 124.)

When once a communication is established between the vagina and bladder, the patient's sufferings are greatly aggravated by the constant dribbling of the urine over the inflamed and ulcerated surface, rendered now still more irritating by its highly ammoniacal character. No mechanical means which ingenuity has devised, and wealth obtained, has been of the smallest use, either in preventing the continual flow of urine into the vagina, or in so receiving the discharges as to prevent the external parts, nates, &c., as well as the bedding around, from being constantly soaked in them. Hence we frequently see symptoms of absorption and blood-poisoning in these latter stages of the disease, evidenced by rigors, a quick pulse, and low fever. If the patient has kept the horizontal posture for some time, and sufficient attention has not been paid to frequently washing out the vagina, and to general cleanliness, phlegmasia dolens has come on, precisely as is seen from absorption of putrid matter in the puerperal state. In other cases, large abscesses form in the neighborhood of the rectum, or vagina, or deep among the pelvic muscles, and thus

help to break up, still faster, the failing powers of the patient.

The mode of death varies. In many cases it is the gradual sinking of exhausted nature; in others, the ulceration makes its way into some bloodvessel, which bleeds freely until checked by incipient fainting. A second attack of hemorrhage finds her so much the weaker on account of the previous loss; fainting is soon induced, from which she probably does not rally.

With regard to the *treatment* of cancer of the uterus, I find considerable difficulty in stating what ought to be the treatment of it in its early stage, or stage of induration, not only on account of its incurable character, but also because its commencement is so insidious, that we can rarely have an opportunity of investigating the case until extensive mischief already exists. Even when examined at an early period, the practitioner, it is true, easily recognizes the solid feel and alteration of the part, and the darting pains and cachectic looks of the patient probably confirm his suspicions, but he dreads to decide the point at the early stage, and hopes on, naturally wishing to give the patient the benefit of every doubt. I have felt the cervix uteri in other and apparently similar cases, as hard, or even more so, and probably more tender, and yet when I had removed the source of irritation, or allayed the inflammatory action of the part, it has assumed its natural characters. I cannot but think that this would be the reasoning of most practitioners in examining a suspicious os and cervix uteri at this stage.

In those cases where the suspicious part consists merely of a little isolated tubercle not bigger than a small pea, and which is probably an indurated muciparous gland, but which is becoming tender and irritable, and the patient complains of lancinating pains, which she distinctly refers to this point, we can successfully obliterate it by holding a piece of lunar caustic against it for about a minute; the darting pains cease henceforth, and on examination two or three weeks afterwards, the tubercle will have nearly, if not entirely disappeared. With this exception, I have no hesitation in declaring, that the

application of caustic in either stage of the disease is mischievous: if applied during the first, or stage of induration, ulceration is liable to be brought on, where, but for this cause, the disease might have continued in abeyance even for years. In the second stage, viz., of ulceration, I have repeatedly seen the process greatly accelerated by caustic; the sore quickly assumes a corroding character, and spreads with a destructive rapidity which soon exhausts the patient.

If the os uteri only, or a portion of it, appears involved in the disease, while the upper part of the cervix, and the uterus within reach, appear healthy, it may be removed with perfect safety, and with the best results. The operation is simple enough, and presents no peculiar difficulties. Two double-pronged hooks, or vulcella, are inserted into the edges of the diseased os uteri, one on each side, and the uterus gradually drawn down to the os externum. This is the most painful part of the operation. Whilst held in this position the os is severed from the cervix, and the uterus returns to its former position. The hemorrhage is sometimes considerable, but it is easily controlled by stuffing the vagina with lint, or a sponge-plug dipped in vinegar or alum water. After twenty-four hours this should be removed, and the vagina well syringed with tepid water, or a weak solution of alum, and a metallic or ivory plug inserted into the os uteri internum, and kept there until the part has healed, to prevent the uterus being closed by cicatrization.

Whenever the disease assumes a *polypoid* form, we ought not to hesitate in applying the ligature. It ought to be tightened at least twice in the twenty-four hours, if not oftener, on account of the yielding character of the tissue through which it has to make its way; and it should be thicker than ordinary, so as to produce greater compression, without cutting into the mass. I have done this in numerous cases, and not only have never seen any bad effects produced, but can confidently assert that great relief has been given, and life considerably prolonged. In all such cases, except the most unfavorable, the improvement in the patient's health and strength has been

very striking. In some the digestive organs have immediately returned to a healthy condition; she has rapidly gained flesh and strength, and lost a great portion of her cachectic appearance. The return of the disease has varied in different individuals: in some sooner, in others later, depending in great measure on the previous extent of the disease and condition of the general health. In some the ligature has been repeated several times over a space of two or three years of tolerable comfort, which have thus been added to her life, whereas, in others, her broken-up health, or the unfavorable shape of the new growth, has forbidden a second attempt.

As it is of the greatest importance to diminish as far as possible any congestion to the pelvic organs, it will be desirable to pay attention to the state of the bowels, and especially that of the liver. As in chlorosis, it is astonishing what quantities of dark offensive fecal matter may be thus removed from the upper parts of the intestinal canal; and the rules which I have given for treating the general health in that condition will equally apply here: the sense of weight, heat, fulness, and the bearing-down pain are diminished, the gastric irritability and derangement relieved, and the appearance of the patient much improved. For a while the sallow, cadaverous hue of cachexia clears off; she again appears with somewhat of her former healthy colors—and there can be little doubt that the longer we enable her to maintain her healthy looks, the longer do we ward off the progress of the disease. Saline laxatives are usually best adapted to these cases, not only because they act without irritation, but, by producing watery evacuations, tend to unload the neighboring vessels, and relieve the disposition to hemorrhoidal fulness which constantly exists.

If the os or cervix give indications of inflammatory action, leeches to the part, or even scarification, if there be much congestion, will be of great value; if, however, the hardness of the cervix be of a more passive character, leeches to the anus would be preferable. Blood thus drawn from the hemorrhoidal vessels frequently relieves the abdominal circulation to a remarkable extent, con-

sidering the comparatively small quantity of blood which is taken, and it is to be regretted that this mode of practice, so frequent on the Continent, has not met with that attention in this country which I think it deserves. "I doubt not," says Sir A. Holland, "that in various cases of visceral inflammation, obstruction, or disease, much more might be attained by drawing away blood from the hemorrhoidal vessels, than by the methods of treatment generally in use. Looking to the connection of these vessels with the circulation through the liver and bowels, it is a strong presumption (and my experience justifies me in stating it) that no given quantity of blood can be abstracted elsewhere, in cases of this nature, with equal good effect." (*Medical Notes and Reflections*, p. 105—note.)

For the same reasons which indicate the use of saline laxatives we must by no means attempt to check the mucous discharge from the vagina, which almost always exists, but rather promote a free secretion by warm hip-baths, and warm injections of a soothing character, both into the rectum as well as the vagina, it being an important practical rule, both at this stage, and also at a later period, that, so long as there is a free discharge, the progress of the disease is slow. Hence, the use of astringent or other applications, for the purpose of stopping the discharge, would be manifestly injurious.

Of all the numerous remedies, known or secret, which have, at different times, been recommended in the treatment of cancer, none have received that recommendation on such legitimate grounds, or have stood the test of experience so well as the preparations of iron—the only other remedy which can approach it in this respect is arsenic. Although the advances which modern physiology has made, by the assistance of the microscope, forbid us to adopt many of the highly interesting views of the late Mr. Carmichael on the nature of cancer, this distinguished surgeon has nevertheless the merit of having enunciated certain important facts of great practical value, which are quite in accordance with the present state of physiological knowledge.

Whether, with Mr. Carmichael, we consider cancer to be a parasitical growth in a part where the vitality of its structure has been injured, or rather the localization of a certain *materies morbi*, which has been separated from the circulation, there can be no doubt that the blood is in a peculiarly unhealthy condition, both as shown by the cachectic appearance of the patient, and by the rapid exhaustion of the vital powers. We may, therefore, assume—First, that cancer is a morbid growth, endowed with a feeble amount of vitality, and which, in fact, is more or less a foreign body, as regards the healthy structure by which it is surrounded: Secondly, that a healthy state of the blood is incompatible with this disease; and that, when once formed, the restoration of the fluid to a healthy condition is the essential means by which either its further growth can be checked, or the favorable, but rare result obtained of separation by sloughing.

Experience has long established the fact, that in chlorosis, where the appearance of the patient so strikingly resembles that of a woman suffering under the cachexia of malignant disease, iron is of the greatest value in restoring the blood to a healthy condition—it not only acts as a powerful tonic, but appears to enter directly into the circulation, and restore to it the deficiency in ferruginous matter which had evidently existed. I regret that I have not made a trial of the various phosphates of iron, whether as the sub-oxyphosphate recommended by Mr. Carmichael, or the biphosphate by M. Fuzet-Dupouget. I have found the sulphate, the citrate, and tartrate, of great use, and can truly say, that after a pretty extensive use of these preparations of iron in cancer of the uterus, especially the sulphate, I feel convinced that there is no remedy so effective in restoring the blood to a healthy condition, and checking the progress of the disease. Whether we give the sulphate combined with laxatives, tonics, or sedatives, this must depend on the peculiarities of each individual case; the citrates and tartrates are best given in an effervescing mixture, and the tinct. of the sesquichloride in soda water, a rough imitation of the celebrated Swalbach water. The local

employment of iron in external cancers, by Mr. Carmichael, has been attended with interesting results, inasmuch as it seemed to promote the process of separation by sloughing between the healthy and diseased part. The sulphate is best used either in the form of injection or suppository, combined with extract of conium; it varies a good deal in its effects, sometimes giving great relief, at others, causing a good deal of pain during the application, but diminishing the quantity of the discharge, and rendering it of a more healthy purulent character. It must, however, be borne in mind that the use of iron as a local remedy applies only to the second stage of cancer, where softening and ulceration have already taken place.

The other remedy to which I alluded, viz., *arsenic*, has long had a reputation in cancer, whether as an alterative tonic in the induration stage, or as a local application, variously combined, when ulceration had commenced. That it is capable of exerting tonic effects of no ordinary character upon the system is seen by the results of the singular habit of eating arsenic, which prevails in certain districts of Hungary and Styria. It is taken much in the same way as opium, &c., in other parts of the world, but apparently with less injurious effects. The digestion is said to be improved, the activity of mind, the strength of body, and endurance of fatigue increased; but the most remarkable effect is the appearance of perfect health which it gives the individual: the skin is clear, the color good, in fact, in every respect indicative of a healthy vigorous circulation; even those advanced in years, under the action of this drug, retain the healthy blooming youthful appearance just described; nor does the remedy appear to lose its effects from long use, or in any wise to shorten life. The other side of the picture is, that when once commenced it cannot easily be left off; the patient becomes dyspeptic, haggard, loses flesh and good looks, and assumes much of the well-known wretched appearance of a dram-drinker or opium-eater when not under the effects of the stimulant. These are no isolated facts as regard the peculiar action of a certain agent; they ap-

pear to be never-failing results tried on a most extensive scale, and over a long series of years, by a considerable mass of population, and therefore affording a larger amount of evidence and experience than can be commonly obtained on such subjects. I have alluded to this curious circumstance in order to point out the fact that arsenic, given in small doses, is capable of exerting remarkable effects upon the general economy. It has been considered "that this substance retards the progress of the complaint, often prevents scirrhus from passing into the ulcerative stage, and sometimes apparently dissipates such tumors completely." (Mr. G. N. Hill, *Ed. Med. and Surg. Journ.*, vol. vi. p. 58, 1810, as quoted by Dr. Walshe, p. 201.)

"The least reflection upon the nature of cancer must lead to the conclusion that the more powerfully alterative a medicine is, the greater the chance, *cæteris paribus*, of its proving beneficial in that disease. This is an *a priori* argument in favor of a trial of arsenical preparations by no means to be disdained, and it of course possesses additional force if these can be combined with any other alterative of a powerful character. Now, in the *iodide of arsenic* these conditions are realized." (Walshe, *loco citat.*) Dr. Walshe has tried it in several cases of scirrhus of the breast in the stage of induration, and has given the following summary of the results:—

"1. Given in doses of one-sixteenth to one-twelfth of a grain twice daily, two hours after eating, the iodide of arsenic is well borne, and may be continued without risk for several months.

"2. The system generally soon gives evidence of its action—unusual perspiration, with dryness of the fauces and alimentary canal occurs. Sometimes slight headache is complained of, but this is rare, and I have known most violent periodical headache, which had afflicted a lady for years, disappear while she was under the influence of the salt.

"3. The pain of the tumor decreases in violence.

"4. The size of the breast generally diminishes, and if the tumor itself does not actually lessen in bulk, I have

at least found that its enlargement, previously more or less active and apparent, becomes, as far as can be determined, suspended. There is difficulty in establishing the fact, on account of the change in dimensions of the breast generally.

"5. The general health improves." (Walshe, *loc. cit.*)

The breast has a great advantage over the uterus as regards the early detection of disease. A trifling induration, a slight pain, is quickly noticed by the patient, and she readily warns her medical man about it; but with the uterus it is very different. In the earliest stage of disease, any local symptoms are either referred to some accidental derangement, or the sympathetic effects which are produced on other and distant organs, especially the stomach, by the commencing uterine disease, form so prominent a part of the symptoms as to divert the patient's attention from the real seat of the mischief, and even mislead the practitioner himself; so that our opportunities of examining the very early stage of uterine cancer are comparatively rare. Even when we meet with a case of very early cephaloma of the uterus, the diagnosis is so difficult, that even though the symptoms have abated, and the part returned to a healthy condition, we can hardly venture to assert that we have cured that which we had not even satisfactorily proved to have existed. It is, therefore, impossible to decide, with any degree of certainty, how far a cephalomatous growth may advance and yet be capable of disappearing again. It is well known that pregnancy is capable of producing extraordinary changes in what has been decided by competent judges and high authorities to be cancer of the os and cervix uteri, where the enlarged, misshapen, and indurated part had returned to the healthy and natural condition. (*Med. Times*, Oct. 12, 1844, p. 30.) Cases have occurred to me where every symptom of cancer of the os and cervix existed, both as regards the general condition of the system, as well as local changes, and where, after a vigorous but protracted struggle between the treatment and the disease, the latter has yielded; the lancinating pains have ceased, and the swollen indurated cervix has returned to

a healthy condition. In two of these cases, the improvement in the state of the uterus was instantly followed by attacks of violent congestion in other parts of the body. In one it assumed the character of formidable phrenitic headache and deep-seated inflammation of one eye, with considerable protrusion of the ball, requiring repeated copious bleedings, and other active treatment, before the attack could be subdued. In the other, the cessation of the uterine affection was followed by a peculiar attack of inflammation of the right lung of a remarkably local character, and which threatened to terminate in abscess. From this she also recovered, under active treatment, and in neither case did any return of the original disease show itself. I have lately observed a somewhat similar translation from uterine disease of one malignant species, probably cephaloma, to multilocular enlargement of the ovary; the uterus, after remaining in a very threatening condition for two years, having returned to a perfectly healthy condition.

The attempt to favor a natural separation of the diseased from the circumjacent sound parts by sloughing, as recommended by numerous authors on cancer, is perfectly legitimate, but applies more to cases where the disease is external, and not internal, as in cancer uteri, although a great deal may still be done, even in the sloughing stage, as I shall have occasion to show, to favor a separation of the diseased from the sound parts, provided the cancerous mass be sufficiently circumscribed. On the other hand, I feel convinced that we possess a much greater influence over the progress of uterine cancer by internal treatment, than on that of the breast. From the results of several interesting cases, I cannot shut my eyes to the apparent fact that, by restoring the circulation to a healthy state, incipient cancer seems for a while to be capable of removal by absorption, and either to be carried into the system and to be localized elsewhere, or to be entirely removed by some of the natural emunctories.

Even when the disease has passed the first stage, and has begun to assume the sloughing form, the occasional use of leeches is productive of much relief, and seems to

check its progress for a while. Sir Charles Clarke's observations on this subject are so excellent, that it would be unfair to this distinguished physician to treat of it in any other words than his own.

"In some instances a profuse, spontaneous bleeding has arisen from some vessel exposed by the ulceration, to the extent of producing syncope. The result of such a circumstance is frequently found to be favorable to the patient, the progress of the symptoms being thereby for the time arrested. Even in the latter stages of the disease, when the loss of blood could hardly be considered to be warranted, it may nevertheless be proper to recommend it. It is a well-known fact that the carcinoma of the uterus involves, in its ulcerated stage, all the parts in its neighborhood. . . . When the process of ulceration is simply confined to the uterus and cellular membrane surrounding it, the symptoms proceed with a degree of regularity and uniformity; but when a new organ is attacked, new symptoms arise, appertaining to, and characteristic of, inflammation in such organ. For instance, when the rectum is attacked, there is tenesmus, great heat in that part, increased distress in voiding the feces, exquisite tenderness of the gut if the finger be carried into it. So in like manner, if the disease proceeds to the bladder, shivering usually comes on, succeeded by heat, great pain, which is fixed and constant, together with strangury. If the disease makes its way, which is not very common, into the cavity of the abdomen, symptoms of peritoneal inflammation will present themselves, such as tenderness of the belly, distension of its cavity, and a small, frequent pulse. Now, if these symptoms be allowed to proceed, the patient will die, as she would do if attacked by acute inflammation of the bladder or of the peritoneum. Thus the presence of these symptoms, even at a late period of the disease, may call for the loss of blood, although under any other circumstances it would be improper to direct such a remedy." (*Opus cit.*, vol. ii. p. 226.)

The local treatment of the disease demands our attention during the ulcerative stage even more than in the early periods; the profuseness and fetor of the discharge,

and its irritating effects upon the vagina and external parts, must be corrected as far as possible, and the practitioner ought to be prepared with a considerable stock of remedies upon which he can ring the changes as they in turn fail to produce the necessary relief. It is of great importance that the patient should use the half-sitting posture from time to time, as long as her strength permits, to favor the escape of the discharge as much as possible; and the strictest attention must be paid to cleanliness, not merely as regards the external person, but also the state of the vagina. Frequent syringing should be used with poppy decoction, to which, if there be much fetor, a few drops of the solutio calcis chlorinatæ may be added. If there be much heat, and other inflammatory symptoms, the liq. plumbi diacetatis will be a useful adjunct. In many cases, however, every addition of this sort seems to give pain, and the patient returns to the use of the mere poppy decoction, which may be rendered still more soothing by being boiled down to a greater degree of concentration, or by the addition of some liquor opii sedativus. Combined with extract of conium I have found the sulphate of iron produce excellent effects; the pain is relieved, and the discharge, losing its fetid watery character, becomes purulent; indeed, we may generally predict an improvement in the patient's comfort when this change in the discharge makes its appearance. I have been in the habit of using a drachm of the sulphate of iron, and extr. conii, in ℥viij of distilled water; but owing to the variable condition of the part, it acts differently not only with different patients, but with the same patient at different times, occasionally producing so much pain as to forbid its use entirely. I presume that this depends in a great measure on some inflammatory action still existing in the part. In these cases it is always best to return to the poppy decoction as likely to afford most relief. I have used various suppositories, but, except common opiate suppositories of the pil. saponis c. opio, my own experience is unfavorable to their use, from their liability to produce pain. Even in the early stage the attempt to introduce the speculum will be attended with much pain,

and as the disease advances it will become quite intolerable. Indeed, I may safely affirm that there is no excuse for using a speculum at any period of uterine cancer; for as I have already shown, it is utterly useless as a means of diagnosis in the first stage, and in the second, or ulcerative stage, its use will be unjustifiable, from the torture it would cause; and, after all, the finger of an experienced practitioner will afford far more information than can be gained by the speculum; hence, in the application of leeches it is necessary either to use Dr. Locock's perforated tube, or a speculum of small calibre.

As the ulcerative process advances, so does the discharge become more profuse, and proportionably more unhealthy, and more irritating to the vagina and external parts. "The contact of this matter with the cutaneous surface may produce irritation, erythema, and even corrosive ulceration, but not actual cancerous ulceration of the parts surrounding the ulcer." (Walshe, *op. cit.*, p. 124.) The copious use of cold cream, &c., to the external parts, and the occasional injection of olive or almond oil into the vagina, will tend to assuage the severe aggravation of the patient's sufferings. At length she usually begins to experience difficulty in passing water, so as to require the catheter to relieve her; after a short time she finds that the bladder is again able to empty itself, but it is no longer under her control; the ulceration has made its way into the bladder, and the urine drains through into the vagina. The moment this communication with the bladder is established, a fresh source of misery and suffering commences; the urine becomes very ammoniacal, and, therefore, highly irritating, and its constant dribbling through the vagina renders nugatory all attempts to protect the mucous lining of this canal.

At this period of the disease, the mucous membrane of the intestines seldom fails to give considerable indications of irritability, by the occasional attacks of diarrhoea, and especially by the red glazed appearance of the patient's tongue. This and other conditions which are liable to appear in the advanced stage of cancer of the uterus will

require treatment according to the ordinary rules of medicine; but in most cases the patient will be able to continue the citrate of iron in the form of effervescing draughts, which may be rendered in summer time still more grateful by being iced.

It is very desirable to defer the internal use of opiates as long as possible, and, indeed, to look upon them as the last string of our bow in these distressing cases; because when once the patient has commenced them, she cannot leave them off; and it too frequently happens that, long before death has freed her from her sufferings, the dose has gradually required to be increased to a formidable extent before any relief can be obtained, and the derangement of stomach and bowels which such doses necessarily produce adds not a little to the difficulty of the treatment, and counterbalances the short periods of ease which they may produce. The preparations of morphia are very good, and so is the liq. opii sedativus; but for the purpose of producing the greatest amount of ease with the least unpleasant effect, I consider the liq. morphiæ bimeconatis of Mr. Squire as superior to all. The combination of other sedatives with opiates, especially the hyoscyamus, lupulus, and conium, is sometimes eminently successful, and will produce hours of comfort when the strongest opiates had failed. Thus, I recollect a patient, in whom four grains of solid opium had not produced the slightest abatement of pain, obtained complete relief merely from fifteen drops of laudanum with thirty of tinct. hyoscyami. Combinations of extr. lactucæ with extr. lupuli, &c., will sometimes enable a small dose of morphia to afford ease when large doses of it had previously failed to produce any effect. It is always good policy not to continue the same form of opiate beyond a certain time, nor to go on increasing its dose as the effects diminish, but to ring the changes on the various preparations, and combine them with the other sedatives of our Pharmacopœia in every possible variety and modification.

CHAPTER XIV.

MALIGNANT DISEASES OF THE UTERUS—CAULIFLOWER EXCRESCENCE OF THE OS UTERI.

THE more recent observations of morbid anatomists have satisfactorily established the fact that this disease is a form of epithelioma, or epithelial cancer. In the os uteri it appears to commence in the minute papillæ of the mucous membrane which covers the part, gradually assuming an epitheliomatous or cancrioid character as the disease advances.

Professor Rudolph Virchow, of Würzburg (*Verhandl., 2te Hälfte*, p. 1020), in his elaborate chapter on cancrioid disease, states that his observations on this subject apply also to "a form of disease which M. Charles Mayer, of Berlin, pointed out to him some years ago, viz., the cauliflower excrescence of the os uteri. Since 1809, when Dr. J. Clarke first described this disease in the *Transactions of the Society for the Improvement of Medical and Surgical Knowledge*, almost every continental author has followed the example of Dr. Hooper in describing the cauliflower excrescence of the os uteri as being a medullary fungus."

The disease now under consideration has none of the characters of a cephalomatous growth, although, even at the present day, we frequently hear the term "cauliflower excrescence" vaguely, and most erroneously, applied to every fungoid growth affecting the uterus. Sir C. M. Clarke has very properly confined this term within narrower and more definite limits, and refers solely to the vascular tumor of the os uteri, which was first distinctly described by his brother, Dr. J. Clarke, as above mentioned, and has been made the subject of a separate chapter by himself in his work *On the Diseases of Females* (Part 2). Although his remarks on this disease were written

long before the precise nature of epithelial cancer was understood, or even its existence known, it is interesting to observe how accurately he has described the characters of the growth; indeed, a better description does not exist of its appearance as seen by the unassisted eye. "There is a striking resemblance between itself and a portion of the upper surface of a cauliflower, or a head of brocoli. The surface is granulated, and it consists of a great number of small projections, which may be picked off from the surface, as the granules may be detached from the vegetable. . . . A membrane, very fine in its texture, is spread over the surface of the tumor, and from this membrane is poured out that aqueous secretion which characterizes, in a marked manner, this disease. . . . If the membrane covering the tumor has been injured in an examination, the bloodvessels immediately beneath it pour out their contents, which appear to consist of florid red blood." (P. 60.) And, again, he says: "It has been observed above, that arterial blood escapes from the tumor when injured; indeed, the tumor appears to be made up of a congeries of bloodvessels, and these bloodvessels are arteries, the infinitely small branches of which, terminating on the surface of the tumor, exhale, in the most abundant manner, an aqueous fluid." (P. 63.)

From the examination of several cases, by himself and others, Professor Virchow considers that there are "three distinct species of papillary tumor of the os uteri, viz:—

"The *simple* form, as described by Frerichs (*Jenaischen Annalen*, s. 7); the *cancroid*, and the *cancerous*.

"The first two combine to form the cauliflower excrescence of the os uteri. It begins as a simple papillary tumor, and passes afterwards into the *cancroid* form (*epithelioma*). The vessels are usually colossal capillaries, with exceedingly thin walls, which either form simple loops on the extremities of the villi, between the layers of epithelium, or develop fresh loops towards the surface, in constantly increasing numbers, or, lastly, form a net-like ramification. Their size, the thinness of their parietes, and their extent of surface, account for the enormous watery secretion, with occasionally the severe

hemorrhage by which the cauliflower excrescence of the os uteri is characterized. At first, the papillæ are simple and closely packed together, so that the surface appears granular, as described by Sir C. M. Clarke. It assumes the cauliflower appearance when the papillæ ramify—which at last grow into fringes of an inch in length, and have almost the appearance of an hydatid mole.” (*Opus cit.*, p. 1023.)

When capable of being seen during life, either from its being of sufficient size to protrude between the labia, or from a careful application of the speculum, so as not to injure its delicate structure, it appears of a florid red color, its surface presenting the irregular granular appearance just described.

The size of the tumor seems to depend, in some measure, on the contractile power of the vagina. When this is considerable, it grows slowly, and attains but a moderate size, its increase being controlled by the pressure which the walls of the vagina exert upon it. On the other hand, when this canal is relaxed, the growth is more rapid. In comparing the structure of these tumors to that of aneurism per anastomosin, or the blood-red nævus, in his work on the diseases of women, it is interesting to observe how nearly Sir C. M. Clarke approached the truth twenty-five years ago, although unassisted by the powers of the microscope.

As in passive menorrhagia and leucorrhœa, arising from debility and want of tone, the symptoms, in the early stages, are of a character little calculated to excite alarm in the patient's mind, so here a watery discharge, slow loss of strength, and gradually increasing derangement of the general health, are symptoms which rarely drive the patient to consult a medical man; and, even if she does, there is not sufficient evidence to justify an examination, or to lead him to differ from the opinion which she probably expresses, that she merely requires a little “setting to rights” to restore her. There is no doubt that a course of tonic medicines, and perhaps some mild astringent injections will, at first, improve matters very decidedly; for the pressure of the vaginal walls

upon the tumor is very effectual in controlling its increase; but, at length, probably from some accidental cause, a discharge of florid blood suddenly appears, and leads to an examination which discovers the nature of the complaint.

The plan of treatment, as far as the general system is concerned, will depend in great measure on the nature of the symptoms which show themselves. It will be needless, however, to repeat those rules for restoring the general health which have been already so frequently discussed before. The local treatment will be necessarily guided by the form and size of the tumor. There seems no doubt, from the observations of Sir C. Clarke, that steadily maintaining a full amount of vaginal contraction, together with constant rest in the horizontal posture, has occasionally been successful in obliterating growths of this character in the same manner as has been effected by pressure in cases of nævi; but it has required long confinement, and, at the best, must ever be an uncertain means of cure. In other cases, the ligature has answered well, and the disease has not returned; nor do I think that it would in any case reappear after the use of the ligature, if the remaining portion of the base had been effectually destroyed by nitrate of silver or caustic potass when the tumor had been removed. When detected by the speculum at an early period, before the ligature would be applicable, the use of caustic, especially the potassa fusa, as in cases of nævus, would be very effectual; with the latter application some vinegar and water should be injected immediately afterwards, to control its destructive action; by this means the vascular structure of the tumor is thoroughly destroyed, and all further growth arrested. The amputation or excision of the os uteri has also been successfully practised by Professor Simpson, of Edinburgh; but I must confess myself in favor of the caustic treatment in cases of small cauliflower excrescence, and of combination of the ligature with caustic in the larger ones, wherever this is practicable. In the case recorded by Dr. Simpson (*Dublin Quarterly Journal of Med. Science*, Nov., 1840), the form of the tumor, and its mode of growth,

precluded the use of the ligature, and its size would have rendered the application of caustic a very questionable remedy.

CHAPTER XV.

CORRODING ULCER OF THE OS UTERI.

THE corroding ulcer of the os uteri belongs to a destructive form of ulceration which has been known under a variety of names, depending chiefly on the situation of the affected part. The term "rodent ulcer" has been appropriately given to it of late years, not only as indicating its most peculiar feature, but also as serving to distinguish it from cancerous disease, for which it has been mistaken.

"It has been confounded by many with different forms of cancer, yet it is distinct from them in structure as well as in history, and had better be described by some name which may not add to the yearly increasing confusion that arises from the use of terms expressing likeness to cancer." (Paget, *Surg. Pathol.*, vol. ii. p. 452.)

"The constantly progressive ulceration is a character in which this disease resembles cancer, especially epithelial cancer. The likeness in this respect may indicate some important affinity between them, but the differences between them are greater; for not only is the rodent ulcer usually unlike that of any cancer in its aspect, rate and mode of progress, but the tissues bounding it, and forming its base and walls, never contain any epithelial or other cancerous structures; they are infiltrated with only such structures as may be found in the walls of common chronic ulcers." (*Opus cit.*, vol. ii. p. 453.)

We are indebted to Sir Charles M. Clarke for the first clear and correct description of this rare and formidable disease, as affecting the uterus. Its early stages, and still more its commencement, are enveloped in so much ob-

scurity, that little is known of its character at these periods. The patient has usually been out of health for some time, with discharge, pain, and other symptoms of uterine derangement; and on making an examination we find a deep excavated ulcer of the os uteri, which is quite peculiar, not only as to the symptoms which attend it, but as regards the physical condition which it presents and the rapidity with which it spreads.

It is well known how remarkably the healthy or unhealthy progress of any internal wound or breach of surface is influenced by the state of the patient's general health at the time;—that, in the rude health, connected with a state of nature, wounds of the most formidable description and frightful extent heal with a rapidity almost incredible; while on the other hand, in a bad habit of body, whether inherited, or the result of poverty, intemperance, or malaria, a mere scratch or pimple will quickly put on an unhealthy sloughing appearance, with disposition to spread and to be followed by dangerous results. From my observations on the few cases of corroding ulcer of the os uteri, which I have had the opportunity of examining at an early period, I am much inclined to view the disease in this light, viz., as connected with an unhealthy state of the system, or "bad habit of body," as it has been called, under the influence of which some little trifling excoriation, or inflammation of a mucous follicle on the os uteri, has put on an ill-conditioned, sloughing action, which in the depending position of the organ at the lower part of the trunk, its copious supply of blood, and vicinity to the hemorrhoidal system, will soon exhibit a disposition to spread rapidly. In offering this opinion I have merely reasoned from the habits of ulcerations in other parts of the body, especially in the extremities, which are more or less depending—for in this case there is nothing of a new growth or formation in which the disease essentially consists as in cancer; it is a rapidly spreading destructive ulceration of parts which do not appear to have undergone any previous organic change.

Although I acknowledge that my observations, on the whole, agree with those of Sir Charles M. Clarke, viz., that

the disease "usually occurs at that period of life at which the secretion of the menstruous fluid becomes naturally interrupted" (*op. cit.*, Part 2, p. 187), yet I cannot help expressing the suspicion that cases of corroding ulcer of the os uteri are occasionally met with at an earlier period of life.

The early symptoms of this disease do not afford us much assistance in deciding upon its nature. The patient has general pelvic discomfort, seldom amounting to pain, unless aggravated by whatever presses upon the uterus, or produces temporary congestion; thus, the passage of hardened feces, or the straining to evacuate the rectum, may act in this way. Usually, however, she complains of a peculiar sensation of heat within the pelvis, and, as the disease advances, this increases to a feeling of actual burning. At the same time she has a thin, watery, yellowish discharge, which increases with the progress of the disease, and after a while begins to show an occasional streak of blood. As the ulceration extends, it eats its way through whatever bloodvessel may cross its path, giving rise to attacks of hemorrhage, which are sometimes so profuse as to threaten immediate danger. The continued drain upon the system from the discharge, and the recurrence of hemorrhage, soon produce a state of general debility: she becomes pale and feeble; the digestive organs sympathize, and give rise to those various derangements which I have already had occasion to notice in connection with uterine disease. Still, however, we do not see that sallow chlorotic look of cachexy to such an extent as is observed so remarkably in cancer; neither do we observe the patient to suffer from those severe attacks of darting pain which, with few exceptions, are so peculiar a feature in cancer of the uterus; indeed, severe pain is not often met with in these cases, the chief source of uneasiness being the hot, burning sensation to which I have already alluded.

In examining per vaginam, we seldom have the opportunity of examining this disease in so early a state as to find merely a portion of, or even one lip only involved; it appears to spread with considerable rapidity over the

whole surface of the os uteri, destroying the lips, and converting the whole circle of it into a soft, pulpy, and tolerably even surface; there are no excavations with hard elevated edges; no induration of the adjacent portion of the uterus; the lips of the os uteri have, as it were, melted away; the cervix has become shorter, or has disappeared entirely, leaving merely a ragged pulpy opening into the uterus, but the body of the uterus is still soft and apparently healthy to the touch, and the whole organ perfectly movable. The above description, drawn solely from observations of the disease where it affects the uterus, agrees remarkably with that which has been given by Mr. Paget, as it occurred in other parts of the body. "It is of irregular shape, but generally tends towards oval or circular. The base, however deeply and unequally excavated, is usually in most parts not warty or nodular, or even plainly granulated: in contrast with cancerous ulcers, one may especially observe this absence, or less amount, of up-growth. It is also comparatively dry and glossy, yielding, for its extent, very little ichor, or other discharge, and has commonly a dull reddish-yellow tint. Its border is slightly, if at all, elevated; if elevated, it is not commonly, or much, either everted or undermined, but is smoothly rounded, or lowly tuberculated. The immediately adjacent skin appears quite healthy. The base and border alike feel tough and hard, as if bounded by a layer of indurated tissue, about a line in thickness. This layer does not much increase in thickness as the ulcer extends, and herein is another chief contrast with cancerous ulceration; in the progress of the rodent ulcer we see mere destruction; in the cancerous we see destruction with coincident and usually more than commensurate growth. (*Op. cit.*, vol. ii. p. 454.) Although the passage of the finger over the surface of the ulcer will be apt to produce a discharge of blood, unless done with the greatest gentleness, it does not excite that acute pain which is frequently the case in uterine cancer, which is not only severe at the moment, but frequently lasts for a long time afterwards; but it communicates rather a sensation of smarting and rawness, apparently much of the same na-

ture as when the finger is passed over any other kind of ulcer. As the destructive process advances to the body of the uterus, there is now a soft, flocculent, pulpy cavity where the os and cervix were; so that, after death, we find the lower part of the uterus entirely removed, leaving only the upper half, or perhaps merely the fundus, remaining. As far as I have had the opportunity of observing, the disease appears to confine itself entirely to the uterus, and not to spread around into the neighboring tissues, as in cancer; a ragged cavity of variable size is left, corresponding to the parts which have been destroyed, but there are no marks of the disease having spread to any distance. The upper portion of the uterus appears healthy; it is neither larger, nor harder, nor more vascular (as far as can be ascertained by examination after death) than in the natural state. We rarely, if ever, see this ulceration make its way into the bladder or rectum, as in cancer.

As it is of importance to form an accurate diagnosis between this disease and cancerous ulceration of the uterus, I have collected its distinguishing features under the following heads:—

1. The patient does not suffer the acute darting pains which are commonly so remarkable a character in cancer of the uterus.

2. Nor does the touch of the finger produce the severe pain which is frequently the case in cancer, but a sensation of soreness.

3. There is no induration of the surrounding parts, as in cancer; on the contrary, they are soft and natural to the touch.

4. The uterus is quite movable.

5. The disease, commonly, does not extend beyond the uterus.

In considering the treatment of this disease we must acknowledge that its past history justifies little hope of a successful issue, and that our chief aim must be to remove every source of irritation which may rouse it into a state of activity. But, retaining a deep conviction that the "habit of body," as it has been called, is an important link in that chain of causation which has

produced such a singular perversion of the natural processes of the system which constitutes this rare disease, I consider it the imperative duty of the medical man carefully to investigate the state of the general system, and ascertain how far its various functions, especially those of the chylopoietic viscera, are in a healthy condition. The more I consider the causes and characters of phagedenic ulceration in other parts, the more do I feel convinced that it is in general, and not local treatment that we must chiefly put our trust. It must be by the appropriate use of alterative, laxative, and tonic medicines that we hope to produce such salutary changes in the unhealthy circulation as shall be incompatible with the morbid action which has been set up in a part; and that so far from irritating the slumbering mischief into rapidly destructive action by the senseless use of escharotics locally applied, our endeavor should be to retard its progress, as far as possible, by such applications as shall soothe its irritability; and, at any rate, keep it in a dormant state. By far the worst cases which have come under my notice have been those where caustic had been applied. The ulcer, till then, had been advancing slowly, but, immediately after its application, it seemed to assume a new character. It had spread as much in two or three days as it had done before in a month. The hemorrhages became more frequent and profuse, and soon exhausted the patient. Still, however, in those rare cases where we not only meet with it, but are able to recognize its true characters at a very early stage, the question is well worthy of consideration, how far the removal of the part by amputation, or destruction of it by caustic potass may not afford us justifiable hopes of cure. Mr. Paget remarks that "the rodent ulcer, so far as it has yet been observed, is never attended by similar disease in the lymphatics, or any other part; and if completely removed, or destroyed, it does not recur." (*Lectures on Surgical Pathology*, vol. ii. p. 455.)

The difficulty, however, is to determine its true nature, where we have the good fortune to observe it in its earliest stages; for, if mistaken for an ordinary ulcera-

tion of the os uteri, the slight application of lunar caustic which such a case would require would only irritate a corroding ulcer, and rouse it to greater activity; and if, as is usually the case, we do not see it until it has made considerable progress, its characters, it is true, will be unmistakable; but, on the other hand, the amount of destruction already produced will give us but little hope of eradicating it by caustic.

It would be needless to enter *specially* upon the subject of general treatment, as it has been already sufficiently discussed in the previous chapters of this work. If the patient manifests any symptoms indicative of hemorrhoidal congestion, and if her strength still permit, four leeches applied to the verge of the anus will frequently give relief. As a local application, the decoct. papaveris, or equal parts of it and infus. anthemidis, form perhaps the best and safest lotion. It is not often that even the liq. plumbi diacet. can be borne. Unless contra-indicated, it is desirable that, during the day, she should preserve the half-sitting posture, to insure a free escape of the discharge; while, at night, she can effect the same object by lying on her side, turning over so as slightly to approach the prone position.

CHAPTER XVI.

PRURITUS PUDENDI.

THE excessive irritation and positive suffering which the different species of this affection are capable of producing, are sufficient reasons for my devoting a chapter to the consideration of what at first sight might seem almost too trivial to deserve a special consideration. There are few, if any, disorders which produce such intolerable annoyance, and the scratching, or friction, which the intense itching demands, generally aggravates

the patient's sufferings, producing purulent elevations of the cuticle, and even severe excoriations.

As pruritus pudendi occurs under several and very different forms, it is essential to distinguish them, as far as possible, from each other, as without this, we shall have little chance of giving the patient relief; the more so as local remedies, which are of the greatest service in one form of the complaint, will aggravate the irritation, and produce great suffering in another. It is the more important to recognize these different species, because, although some appear to depend on causes which are not within our reach, there are others which are very amenable to treatment.

I think that the different forms under which pruritus pudendi appears may be best arranged under two general heads—the inflammatory and the non-inflammatory—or, that which is attended with, and that which is without, vascular excitement.

Of the first class, and that which in the unimpregnated state occurs most frequently, is, where the labia, nymphæ, and whole os externum are hot, red, and more or less swollen. The irritation (to the feelings of the patient) is more like that of urticaria, viz., a sensation of intolerable prickling and tingling, combined with burning heat and intense itching, coming on in paroxysms, as after meals—especially when there is acidity of stomach, or by standing before a fire, or on becoming warm in bed, and aggravated by constipation, torpid liver, hemorrhoidal congestion, loaded urine, and especially the approach of a catamenial period. The patient suffers from severe attacks of flushing, which usually usher in a paroxysm. Hence we not unfrequently observe that this form of pruritus is associated with those uterine symptoms which I have elsewhere shown to depend upon a rheumatic-gouty condition of the system; and hence we occasionally observe that these attacks alternate, or are metastatic, with rheumatic affections, headaches, and eruptions in other parts of the body.

As there is generally more or less derangement of the stomach and bowels, with torpidity of the liver, the treat-

ment will consist in giving a brisk mercurial purge, followed by cooling saline medicines, three or four times a day, and to keep the parts soaked in tepid fomentations of decoct. papav., with or without the liq. plumbi diacetatis. In some cases, the Goulard does not appear to relieve—it seems, as the patient expresses it, to dry the parts, and thus rather to increase than diminish the irritation. In these cases, the substitution of some vinum colchici is of advantage, and increases the soothing effect of the poppy decoction.

Although cold applications, or even the cold sitz-bath, afford for the time a most perfect and grateful relief to the patient's sufferings, a very little experience will soon show her that it is but of a temporary character, and is but too frequently followed by considerable reaction, and by a severe exacerbation of the complaint. Hence, although tepid applications do not produce such immediate and striking relief, their effects last longer, and they are not followed by that return of the symptoms in an aggravated form, which is so surely the case when cold has been used. If there be distinct indications of hemorrhoidal congestion, four leeches to the anus will be useful, especially if the patient be at that time of life when the menses are beginning to cease.

It is of great importance to ascertain, if possible, whether this form of pruritus alternates with any other affection, as a knowledge of the one is generally a sure guide to the successful treatment of the other. As before stated, it is frequently connected with the various forms of dyspeptic derangement, constipation, hemorrhoidal congestion, a rheumatic state, and that want of general tone and health which characterizes these conditions of the system. Hence, after rousing the liver and bowels to brisk action, we shall do well to give the iodide of potassium with liq. potassæ in sarsaparilla, gradually feeling our way to the use of mineral acids and tonics. Change of air is desirable, and in well-marked rheumatic-gouty cases, a course of Bath waters will be beneficial.

It is difficult to know the precise relation of the discharge (where this appears) to the paroxysms of irrita-

tion: in some cases it appears to be the effect of the inflammatory heat, redness, &c., in which the vulva is involved; in other cases, where the rheumatic-gouty diathesis is equally manifest, the itching seems to follow the appearance, and to be an effect of the discharge, which, under these circumstances, is usually of a purulent character. The point, however, is of little practical consequence, as it has no influence, that I know of, upon the treatment. The alteratives must be repeated from time to time, and the bowels gently moved every morning by a powder of pulv. guaiaci and magnesia, āā gr. x.

The other form of pruritus pudendi, which is accompanied with vascular excitement, is more frequently seen in the early months of pregnancy than in the unimpregnated state. The delicate skin and mucous membrane of the vulva are hot and inflamed, and are covered with numerous little elevations of the epithelium like aphthæ. These vary according to the severity of the attack. In mild cases they are scattered singly here and there, and the membrane between them is not much inflamed; but in more aggravated cases they are highly confluent, forming thick patches of aphthous elevations, as in the worst forms of thrush, the whole vulva being in a state of high inflammation. Occasionally the eruption extends over the whole perineum, forming large purulent bullæ, which, as well as the aphthous masses within the vulva, are easily destroyed by the friction which the intolerable itching demands, leaving the abraded surface raw and inflamed, and sometimes giving rise to severe ulceration.

In mild cases of pruritus pudendi from vaginal aphthæ, we do not observe much constitutional disturbance; but when the attack is severe, it is generally preceded by shivering, followed by smart febrile excitement, occasionally requiring even the use of the lancet. As the constitutional symptoms are usually of the gastro-bilious type, an active dose of calomel and James's powder should be premised; or if the stomach be much deranged, an emetic may be given first with good effect. After the calomel she should take a saline diaphoretic at short intervals, and a brisk saline aperient the following morning.

It is to the late Dr. Dewees, of Philadelphia, that we are indebted for having first pointed out the real character of this form of pruritus pudendi, and, therefore, also the appropriate application, the good effects of which are so well known in the treatment of the common thrush of infants. As soon as the constitutional symptoms have been allayed, nothing gives such relief to the local discomfort, as a solution of borax in poppy decoction: the parts should be kept wet with it day and night, and in twenty-four hours a very decided improvement will be observed. If the fever had run high, and the local inflammation been severe, it will be desirable to use Goulard with the poppy decoction, instead of the borax, in the first instance.

Of those forms of pruritus pudendi which come under the second general head, viz., where it occurs *without* local vascular excitement, I have observed two—the first, where it affects the external parts of generation; the second, where it appears confined to the uterus, and upper part of the vagina.

In the first, the labia, nymphæ, &c., are pale, relaxed, very flabby, and usually dry. The patient does not complain of the burning, scorching, tingling irritation which characterizes her sufferings in the two preceding affections. It is that species of irritation to which the term *formication* strictly applies; she describes it to be like insects crawling about her, and the irritation, in its way, seems to be fully as intolerable as that of the other forms of pruritus.

The constitutional symptoms are those of general atony and debility: the face is pale and sallow; she has lost flesh; the pulse is feeble; the tongue pale, indented at the edges, and frequently sulcated; she is weak and depressed, both from loss of strength and constant suffering; the digestive organs are sluggish; the appetite fails; and the general health and strength begin to lose ground.

This species of pruritus pudendi is chiefly met with at about the change of life, when the catamenia are becom-

ing scanty and irregular, or where the discharge has already ceased.

As the affection appears to be closely connected with the feeble condition of the general health, the constitutional treatment will consist of alterative and tonic medicines, under the action of which we shall soon observe an improvement in her appearance and strength. As regards the local treatment, I know of only one application which has had any effect upon the irritation, and certainly this has proved most eminently successful. I am indebted for it to my late friend, Dr. Girgens, of Wiesbaden, one of the most accomplished continental physicians of his time. It consists of equal parts of unguent. hydrarg., nitrico-oxydi, and cod-liver oil; this forms a pomade of a soft, agreeable consistence, and delicate red color. Its application, in this form of pruritus, gives immediate relief, whereas in the others, as might be expected, it aggravates the irritation. The parts should be well washed night and morning with fine soap and warm water, so that the grease of the previous application may be entirely removed before a fresh one is made.

The other form of pruritus, without vascular excitement, appears to be confined to the uterus and upper part of the vagina. Like the species just described, the sensation is that of *formication*, not that of heat and tingling, as in the other forms. There is not unfrequently a feeling of internal warmth, but this and other discomforts are lost in the predominant irritation, which, being situated internally, defies any attempt of the patient to reach for the purpose of getting relief by friction.

This uterine formication, as it might not improperly be called, is an obscure affection. It seems to exist chiefly in connection with certain altered states of the circulation and functions of the uterus and neighboring organs. Hence we see it in women at the change of life. It not unfrequently occurs in the early stages of organic disease, not only of the uterus and ovaries, but of the bladder and kidneys, especially in that form of renal dis-

ease to which I have alluded in the chapter on "Vascular Tumor of the Orifice of the Urethra." It will be obvious, therefore, that we possess not direct means of allaying this form of irritation; little can be done in a case of this sort beyond regulating the general health, and allaying the local symptoms of the affection, whatever that may be, which appears to act as the exciting cause.

CHAPTER XVII.

ON THE VASCULAR TUMOR OF THE ORIFICE OF THE URETHRA.

THIS growth appears in the form of a rounded or elongated excrescence of a bright-red color, with a smooth, shining surface, like a small red berry, having its attachment just within the orifice of the urethra, generally at its lower part, and occupying the orifice, so as to be seen when the labia are separated. Its attachment is generally slight, and it is commonly so movable that were it not for the intense sensibility of the growth, it might be taken for a little globular clot of florid blood lying within the orifice of the urethra.

The intense sensibility of the part is a characteristic feature of this disease, so that even the passage of urine is always attended with most intolerable suffering, and is usually followed by a drop or two of pure blood.

As regards the structure of these vascular tumors, I may state that they consist of all the normal elements of the mucous membrane in morbid abundance; that is, they are covered with a large quantity of tessellated epithelium; they are extremely vascular, from an abundance of close-set and looped bloodvessels; while their inordinate sensibility seems rather to depend upon the constant irritation to which they are necessarily exposed,

than to any extraordinary development of the nerves within them.

The cases of vascular tumor of the orifice of the urethra which I have had the opportunity of seeing, have been entirely among women under the age of thirty, and the majority of them have been single. As I before observed, the local suffering forms the prominent symptom of the case; the health is but little deranged, and what deviations may be observed are owing to the constant pain and irritation by which the patient is harassed. Of the various affections of the urethra which occur in women, there is, perhaps, none which appears to be so purely local as this. It seems to occur more frequently among the lower than among the upper classes; and if this be really the case, we might, with a fair amount of justice, attribute it to the great difference in point of cleanliness which exists between them: in the one, copious ablution of these parts is daily practised, whereas among the lower classes of society it is nearly or quite unknown; and it may readily be imagined that no little irritation must be frequently the result of this neglect. There is little doubt but that these tumors may be considered analogous to soft vascular warts, and it is therefore reasonable to suppose that, like other warty formations, they are capable of being produced by the action of certain irritants. I have described the above form as the genuine type of vascular tumor of the orifice of the urethra; but this disease occurs under a considerable variety of forms, some of which, from their minutely lobulated surface and broad attachment, extending more than half round the urethra, present a still greater resemblance to warty growths than the form above mentioned.

The treatment of the vascular tumor of the orifice of the urethra is entirely local, and will depend in great measure on its form, size, and position. If so close to the orifice that it can be easily protruded by pressing upon the urethra with the finger, and if, moreover, it be loose, movable, and therefore with a minute pedicle, it may be snipped off with scissors, and the root immediately touched with caustic. Dr. West is in the habit of using a hot wire in these cases,

which is perhaps not much more painful, and certainly more effective.

THICKENING OF THE MUCOUS MEMBRANE AT THE ORIFICE OF THE URETHRA—WARTY VEGETATIONS OF THE ORIFICE—VASCULARITY OF THE ORIFICE.

Another form of morbid development of the mucous membrane at the orifice of the urethra is a thickening or hypertrophy of it which is occasionally met with, and which forms a most troublesome and intractable affection. Although attended by none of the severe suffering which is so marked in the vascular tumor of the orifice of the urethra, the patient has a constant dull pain in the part, frequent desire to pass water, and not unfrequently much pain about the orifice when the urine passes.

On examination, the urethra, near the orifice, is felt thicker and firmer than natural; the orifice is large and swollen, and appears filled up with soft cushiony folds of the mucous membrane, as if it were too large for the calibre of the urethra; there is no florid redness, nor any peculiar tenderness, unless the swollen part be pressed against by the finger, or at the moment of emptying the bladder; the part is rather of a purple color, the folds of the mucous membrane soft and flabby.

The little vegetations of a warty character which are seen around the orifice of the urethra, and sometimes spreading to the nymphæ and neighboring parts, are attended with sufferings as severe as those produced by vascular tumor of the orifice. They have, in fact, a considerable analogy of structure, being hypertrophied papillæ, supplied with large arterial loops and nerves. I am unable to say how far they extend into the canal itself, but I have reason to think that in some cases the urethra is affected throughout its whole length, being much more tender than natural, harder, and sometimes rolling under the finger like a thick cord. The neck of the bladder would seem to be in a similar condition to that of the urethra, for slight pressure on

this part produces great pain, and if a catheter be passed, it causes intolerable torture the instant it reaches the spot.

Many, perhaps all, of these urethral affections, are accompanied with a good deal of disturbance of the general health, but it is not always very easy to determine whether it be the cause or the effect of the local affection: in many it is both—cause producing effect, and effect reacting as cause. In our treatment, therefore, it is as important to attend to the one condition as to the other, if we wish to give the patient the best chance of getting rid of what is not unfrequently a very intractable affection. On finding a local cause for the patient's sufferings, we are but too apt to rest satisfied with our discovery, and to make no further attempt to investigate the morbid conditions essentially connected with the origin of the disease. We are indebted to the late Dr. Prout for much profound research and many valuable remarks on the morbid states of the urethra in connection with kidney disease. Dr. Prout has associated the formation of certain urethral tumors, or growths, with a diseased action of the mucous membrane lining the kidney, and usually connected with the strumous diathesis. "These tumors occasionally contain depositions of a plastic grayish matter, or partake of the character of the *nævus*, &c.; at other times they are associated with peculiar cutaneous affections. Sometimes among members of the same family subject to these affections we see one or more liable to insanity; others to excessive irritability of the skin; others, in early life, to a disposition to phthisis, or, in middle life, to asthma; or, if they have been exposed to malarious influence, to affections of the liver and spleen. The object of these remarks is to show that, in a system thus predisposed, the kidneys and bladder, on account of their intimate connection with the sexual organs and functions, and on account of the innumerable diseases to which these organs are exposed, are peculiarly liable to come in for their share of the mischief." (*On Stomach and Renal Diseases*, p. 373.)

A vascular state, and intense sensibility of the orifice of the urethra, has long since been pointed out by Dr. Prout as indicating an unhealthy state of the mucous membrane

lining the ureter and kidney; and numerous cases have come under my own observation which have accurately verified the correctness of his remarks. The prominent, and perhaps at first the only symptom, is the intense tenderness of the orifice of the urethra, so that not only the passage of the urine, but the slightest touch, pressure, or movement of the part, will cause intolerable suffering. On examination, the orifice is found highly vascular, like a red ring of mucous membrane, more or less prominent, swollen, and everted; the slightest touch produces severe pain, which will sometimes continue for a considerable while afterwards, running up the urethra to the bladder. I have already observed that the mucous membrane of the whole canal frequently partakes in this state of turgid congestion, and that the orifice of the bladder is as morbidly sensitive as that of the urethra.

In the early stage the only other symptom which excites notice is an irritability of the bladder, which necessitates the frequent evacuation of its contents, so that the patient's sleep is much broken. After a little while she begins to complain of dull pain in the kidney region of one side, increased by pressure or a slight tap upon the part, and occasionally darting downwards and forwards along the course of the ureter.

"The urine (as Dr. Prout remarks) is generally acid; of a pale greenish whey-like color; opalescent, from the presence of minute flocculi or particles of diseased epithelium or mucus; of low specific gravity (that is, generally below 1.020) often serous, but rarely bloody. Sometimes, on being heated, it deposits the phosphates; but the lithate of ammonia is seldom so abundant as to be spontaneously separated on the cooling of the urine; and, when this circumstance does take place, the color of the sediment, instead of being yellow or red, is usually of a grayish ash tint. After standing for some time the urine becomes clearer, but seldom acquires perfect transparency, even by filtering; and the peculiar sediment in general is very easily remixed on shaking." (P. 368.)

In treating the vegetations which are occasionally found at the orifice of the urethra and surrounding parts,

we must pursue a similar course as in vascular tumor of the orifice of the urethra; the larger ones may be snipped off, and the others thoroughly destroyed by lunar caustic. I have reason to believe that, where this has been done, they do not return; but there is no doubt that fresh ones form, like vesicles or pustules in a cutaneous disease; so that repeated applications are frequently required before the morbid action is fairly stopped. I believe I can safely affirm that these vegetations seldom appear without some defect in the state of the general health. In some patients it appears to be mere debility; in others a rheumatic-gouty state of the system; whereas, in others, it is evidently connected with cutaneous affections, or dependent on malaria. It is, therefore, highly important to carefully investigate the concomitant symptoms of these cases, and to satisfy ourselves as to the real nature of their origin, and adopt such measures as will suit the peculiarities of each particular case.

With regard to the vascularity of the orifice of the urethra in connection with an affection of the kidney, the treatment must be in great measure of a general nature. The biliary and intestinal secretions should be roused by laxatives of an alterative character, and we may then proceed to give the nitro-muriatic acid with great advantage. If the patient be of a feeble habit of body, as is usually the case, with a weak pulse, pale flabby tongue, moist clammy skin, relaxed vagina, and disposition to leucorrhœa, and if moreover the urine contains mucus, or muco-pus, the nitro-muriatic acid should be combined with infusion of pale bark, to which we should add tincture of hyoscyamus, or the compound tinct. of camphor. In other cases, where the urine is still more unhealthy, it will be better to substitute the infus. Pareiræ for the bark. If this condition of the orifice is known to exist, we should repeatedly make a careful examination of the kidney region, to detect as early as possible the presence of pain on pressure; attention to this point will rarely fail to discover it, and wherever this is the case, the compound camphor liniment, with one-fourth or fifth of laudanum, should be applied to the part, until the skin has

been thoroughly reddened as with a mustard plaster. If we have not seen the case until a later stage of the affection, the pain in the kidney has usually become a much more prominent feature, and little relief can be expected from general treatment until this has been relieved by leeching or cupping. In some cases, where nephritic inflammation has been insidiously creeping on, the urine was becoming serous, and its color verging into the red tint peculiar to this condition, local abstraction of blood has not only restored the unhealthy characters of the urine, but given the patient great relief. The remaining portion of the treatment, as already stated, has consisted in attention to the state of the liver and bowels, with a course of nitro-muriatic acid in a bitter or tonic infusion, or combined with some preparation of sarsaparilla.

I am unable to say with certainty whether the swollen and thickened condition of the urethra from a varicose state of the veins of the part, as described by Sir Charles Clarke, is in any way connected with the urethral affection just mentioned. In a slight degree, it is not uncommon to find the urethra thicker and firmer than in the natural state; but I have not seen any reason to associate it with that condition of the orifice which Dr. Prout has shown to depend on renal disease. The question is one of interest, and still remains open for solution to future inquiries.

The bulbous condition of the urethra, as described by Sir C. M. Clarke, is not common; for I have seen but one case where the swelling had proceeded to the extent which he describes. In this patient, the urethra, just beneath the symphysis pubis, was as large as the half of a small-sized walnut; numerous small veins were visible, ramifying over its surface; they became distinctly engorged when the patient stood upright, and diminished when she reclined; and the size and hardness of the swelling were similarly affected. When standing, she had a constant sense of uneasiness about the urethra, and a frequent irritable want to pass water; but I cannot give a better idea of this condition than by quoting Sir C. M. Clarke's description of it:—

"When the patient is in an erect posture, the size of these vessels increases, and she complains of a sense of fulness in the parts; when she lies down the vessels carry less blood, and the sensation of fulness is diminished. If pressure be made upon the part, the swelling and redness subside for a time; but both return directly upon the pressure being discontinued. Sometimes a pouch forms in the posterior part of the urethra, in which a few drops of urine lodge, and from which situation it may be pressed out by a finger applied to the part. If a catheter is introduced into the urethra, it may be carried backwards to the part where this lodgement of urine is found. Upon this cause depends, perhaps, one of the most troublesome symptoms of the disease—a frequent desire to make water, both in the night and during the day, so as to interfere with the patient's rest." (*On the Diseases of Females*, Part I. p. 310.)

The indications of treatment are, to clear the bowels by a brisk mercurial purge, and to keep up a moderate action upon them afterwards; to enjoin strictly the horizontal posture, and occasionally to apply three or four leeches to the swelling, as the case may require. In the case above alluded to, permanent relief was not given until the second or third application of leeches; cold fomentations of Goulard and poppy decoction were afterwards used to prevent the irritation of the bites, and the recumbent posture and occasional laxatives persisted in for some weeks after.

CHAPTER XVIII.

OVARIAN AFFECTIONS.

THE ovaries are so closely connected with the uterus, not only as to their position and attachment, but also as regards the two great functions of menstruation and im-

pregnation, in which both organs play so important a part, that it is scarcely possible for any considerable derangement, whether of function, position, or structure, to occur in the one without seriously influencing the healthy actions of the other.

In the chapter on "Dysmenorrhœa" I have given many striking illustrations of this connection; for instance, where the monthly uterine struggle and suffering, in cases of obstructive dysmenorrhœa, sooner or later sets up ovarian irritation; and I have shown that an irritable or inflammatory condition of the ovary is connected with those exudations and portions of membrane which are discharged from the uterus in another form of dysmenorrhœa. It has also been shown that the ovaries are frequently displaced, and their circulation seriously obstructed in certain uterine displacements, giving cause to severe menstrual suffering, and occasional profuse menorrhagia, besides the symptoms arising from their state of congestion, inflammation, &c. It is, therefore, not always easy to separate the affections of one organ from those of the other, the one acting and reacting on the other as cause and effect. Nor, in many instances, is it of any practical use to do so; the combined derangements of the two organs requiring the same indications and plan of treatment.

In other ovarian affections, this is either not the case, or if there be any concomitant uterine derangement, it is so eclipsed by the greater prominence and importance of the ovarian symptoms as to require the attention of the practitioner almost exclusively to them. This is still more so in cases of ovarian disease, accompanied, as they usually are, with considerable enlargement.

OOPHORITIS.

Oophoritis, or inflammation of the ovary, occurs chiefly under two forms, the acute, and the chronic or subacute. In speaking of acute oophoritis I do not allude to it as occurring in the puerperal state, because this form is

essentially connected with the subject of puerperal fever; and, therefore, does not properly belong to the present work.

The usual circumstances under which we meet acute oophoritis in the unimpregnated state, uncomplicated with inflammation of the adjacent parts, are where the attack has been preceded, and, in fact, caused, by sudden suppression of the catamenia, as from exposure to cold, whilst this discharge was present, &c. However variable and numerous may be the causes of chronic or subacute oophoritis, it is rare to meet with the acute form in the unimpregnated state, arising from any other cause than the one I have just mentioned. It is difficult to unravel the chain of causation in the attacks of ovarian inflammation occurring in connection with abortion; for, in some cases, the oophoritis appears to have produced the premature expulsion of the ovum; whereas, in others, the abortion so far caused the oophoritis, that the inflammatory attack evidently came on during this process.

It may be fairly questioned if acute suppression of the menses can ever exist beyond a few hours without oophoritis being the result; it is merely another link in the chain, as much as the peritonitis which will follow it, and the general abdominal inflammation which will follow the peritonitis, if not checked by the rules of art. But the features of acute suppression are so marked, the pain so intense, the fever so high, and the ordinary remedies so immediately at hand, so simple and yet so effective, if promptly and energetically used, that the mischief is generally checked in the very outset, and the system relieved by the re-establishment of the suppressed discharge before there has been time to convert the intense engorgement of the ovary into a state of actual inflammation.

The chief causes, therefore, are (see Chapter I.) "exposure to cold and wet, a sharp attack of fever, violent affections of the mind, and the derangement caused by a meal of indigestible food."

The enumeration of the symptoms of oophoritis which has been given by Dr. Löwenhardt in his admirable Observations on Ovarian Inflammation, and quoted by my-

self on a former occasion (*British and Foreign Medical Review*, vol. ii. p. 527), affords so perfect a picture of the disease, that I cannot do better than quote it here: "As long as the inflammation is confined to the ovarium itself, the seat of the disease can only be shown by the pain, since there is no functional disturbance to mark its presence. Immediately over the symphysis pubis, on the affected side (both ovaries are seldom inflamed at once), between the groin and the uterus, the abdomen is painful and somewhat tense; at times it is distinctly swollen, and hotter than natural. The pain is seldom violent, rather dull, but becomes sharper and darting as the peritoneum is involved; the part is painful on pressure, and on suddenly assuming the erect posture; and, as long as the inflammation does not spread, remains confined to the affected spot. Usually, however, the inflammatory process rapidly extends at an early period to the peritoneum, especially when under circumstances which predispose this membrane to inflammation, viz., the puerperal state, and, besides the sharp darting pain above mentioned, produces affections either of the bladder or the rectum. In the former case, patients complain of frequent desire to pass water, and scalding, even to a painful degree, when evacuating the bladder, so as to be easily mistaken for inflammation of its mucous lining; the neighborhood of the bladder is felt tense, and is very tender on pressure. The urine is mostly high-colored, and is passed in the usual quantity, in spite of frequent interruptions. The function of the rectum is but little impeded. On the other hand, when the irritation has spread to the posterior portion of the peritoneum, the characters of the disease are very different; the bladder is now less affected than the rectum. In this case the patient has a sensation of painful pressure in the cavity of the pelvis amounting to bearing down; the hypogastric region is not so tense or hot, and less sensitive to external pressure. Fruitless forcing to evacuate the bowels arises, frequently amounting to actual tenesmus." From the same reason, the passage of solid feces, or scybalous lumps, is frequently attended with acute suffering, from the inflamed ovary

being pressed upon by the intestine at the moment of distension.

On examining per vaginam, the practitioner is frequently struck by the intense tenderness of the os and cervix uteri; and yet he has neither elicited any evidence from the patient to make him suspect inflammation, nor does the examination afford any of those results which attend this condition. Neither the os nor the cervix is hot, swollen, tense, or throbbing, and yet the pain produced by a slight touch is far more intolerable than is commonly observed in inflammation of this part. A little attention will soon convince him that it is not the lower part of the uterus which is so exquisitely tender, but something beyond and to one side, against which the os or cervix is pressed when he touches it with his finger. If he carefully insinuate his finger between the cervix and the vagina, in the direction of the painful spot, he will find that he may press freely against the cervix without hurting the patient, but the slightest pressure against the vagina, in about the direction of the sacro-iliac synchondrosis, produces agony. The seat of this extreme tenderness is evidently, therefore, outside the vagina, and if he move his finger with great caution and gentleness, he will be conscious of touching a convex, moderately firm, and movable body beyond, which is the central point of her suffering. On examining per rectum he will, of course, now feel the os and cervix uteri in the front of his finger, and pressing against them through the front wall of the rectum (from behind forwards) he will be enabled to convince himself still further that the tenderness of which the patient complains is not situated in these parts. On passing the finger further up the bowel, between the body of the uterus and sacro-iliac synchondrosis, he will come upon the same intolerably painful spot as he did per vaginam, and can usually feel the form of the ovary here with tolerable distinctness; if he hold the finger gently against this part, and press the groin of the same side with the other hand, he will feel the ovary move, and the patient will instantly complain of pain.

If the usual means have been adopted for restoring the suppressed catamenial discharge without success, and the attack of ovarian inflammation appear thoroughly established, leeches must be applied as near to the ovary as possible. This is best effected by Dr. Locock's leeching tube, with an oblique perforated end. The intestine should be well washed out with warm water; and the tube smeared with a little cream, instead of oil, for lubrication. A previous examination will tell us sufficiently in what direction to pass the tube, and her own sensations will enable us to adjust it upon the ovary with considerable accuracy. The leeches may now be introduced and pushed up to the end of the tube by a proper piston. If the ovary can be distinctly felt per vaginam, the leeches may be applied through this canal by a small speculum with an oblique end, so as to lie flat against the wall of the vagina; indeed the application of them to the uterus itself is sometimes productive of much relief by recalling the suppressed secretion, provided the practitioner has the opportunity of seeing the patient early enough. The application of leeches to the anus is of course much easier, but much less effective, and cannot be reckoned on with any certainty if the attack be severe. Besides the leeches, a sinapism, or some camphor liniment with laudanum, should be applied to the inguinal and iliac regions of that side; the rectum and vagina should be washed out with strong poppy decoction, as hot as she can bear it without discomfort; the whole pelvis should be wrapped in a flannel, wrung out of hot mustard decoction, and the same be applied to the legs and feet. It will be advisable to give her five grains of calomel and of James's powder, and in the morning a common laxative draught of sodæ potassio-tart., with manna, &c. If the inflammatory attack be not thoroughly crushed by these means, it will be advisable to bring the system gently under the influence of mercury, partly by its internal exhibition, and partly by the inunction of mercurial liniment or ointment into the inguinal region of the affected side.

The subacute or chronic form of oophoritis may arise from a variety of causes; it may be the result of an im-

perfectly cured attack of acute inflammation, from exposure to cold during a menstrual period, but of not sufficient severity to induce entire suppression of the catamenia, or an acute attack of inflammation. The dysmenorrhœa arising from a contracted or nearly impervious os uteri, seldom exists for any considerable period without inducing chronic inflammation of the ovary. The struggle and suffering which the uterus undergoes at every menstrual period seem at last to convert the irritation of the ovary into actual inflammation. Retroversion is a frequent cause of swelling and great tenderness of the ovary, not unfrequently amounting to oophoritis, from the fundus of the uterus pulling the ovary backwards, and thus by the tension of the broad ligament, producing considerable obstruction to its returning circulation. Constipation appears to act much in the same manner, and it must be borne in mind that all these causes act with much greater severity at a menstrual period, more particularly if they are combined with constipation. To these we must also add sexual intercourse for the first time, especially if there have been previously an irritable state of the ovary, with dysmenorrhœa; and lastly, early abortions, where little attention has been paid either to the general health or to observing a proper amount of rest afterwards.

In the subacute or chronic form of oophoritis, which is much more frequently met with than the acute disease which I have just described, the local symptoms are better marked, from not being attended with any severe inflammatory attack of the peritoneum or neighboring viscera, although it is usually complicated with more or less derangement of the rectum, bladder, and especially the uterus, causing, in the latter case, severe dysmenorrhœa, which, as I have before shown, is attended with fibrinous exudations at these periods.

The pain, as in the acute form, is situated in one or other groin, or rather ovarian region, mostly on the left side, darting towards the bladder or rectum, and extending down the thigh. It is almost always aggravated just before the appearance of the catamenia, at which

time it frequently assumes more or less of an acute character, until relieved by the discharge. The pain is also increased by the act of extending the thigh upon the pelvis, as in the erect posture, by which the integuments are put upon the stretch, and thus the subjacent parts pressed upon. Thus, some patients are unable to stand without resting the foot of the affected side upon a stool, so as to keep the thigh more or less bent upon the pelvis, by which the integuments, &c., are relaxed. There is frequently much irritability of the bladder, the patient being unable to retain more than a small quantity of water at a time, and the evacuation of it occasionally attended with much pain and strangury. In such cases the pain above the symphysis pubis is sometimes as prominent a symptom as that in the groin, and might thereby lead a careless observer to suppose that the bladder is really the seat of the disease. The passage of the feces is also attended with pain and tenesmus; from the distended rectum, especially if there be solid feces, pressing on the inflamed and swollen ovary.

Since the pain is more local and circumscribed in the chronic or subacute form of oophoritis, it will be the more easy to decide whether the rectum, or bladder, be most implicated in the attack, a point of diagnosis which is frequently of much importance, as it tells us whether the anterior or posterior portion of the ovary be most affected. Although the symptoms of chronic oophoritis differ from those of the acute form rather in degree than in their character, yet there are many important features in the one which do not exist in the other. In the subacute or chronic form, we do not see any of that constitutional disturbance which is so severe and marked in acute oophoritis—except during the paroxysms of pain at the catamenial periods; the suffering is by no means so intense: indeed, when in a favorable position, viz., with the thigh of that side bent upon the abdomen, she will be free from pain for hours at a time, except when the inflamed ovary has been accidentally pressed upon from without, or by the passage of hardened feces from within. The catamenia are not suppressed, nor are they

necessarily even diminished in quantity; sometimes they are exceedingly profuse, but on the whole they are more frequently the reverse, being scanty and discolored. The chief characteristics (see "Ovarian Dysmenorrhœa") are, that the pain at first is not uterine, but in the ovarian region; that it is of a peculiar sickening, intolerable character; and that when the catamenial discharge comes on, it is more or less mixed with the shreddy fibrinous exudations to which I have already alluded: indeed, in severe cases, the discharge appears to consist of little else.

The characteristic features of chronic or subacute oophoritis are, of course, best marked during a catamenial period, but as the ovary remains more or less enlarged during the intervals, and in certain cases tends to increase in size, the diagnosis by examination per vaginam and rectum is seldom difficult. Pressure with the hand externally in the ovarian region, whilst the examining finger of the other is introduced per rectum, is peculiarly valuable, as we shall thus be able to move the ovary against the finger in the rectum, and to feel distinctly the form of it, while the patient herself will frequently exclaim that we are holding the painful part between our two hands. If, however, the ovary has undergone some considerable degree of enlargement, it is sometimes so tightly pressed against the uterus, and its tenderness is so excessive, that it becomes very difficult to distinguish it from the uterus itself—not only on account of its size, but of its immobility. In these cases, Professor Simpson's uterine sound is of the greatest value; the direction in which it passes soon tells where the uterus lies, and by gently pulling it to one side by the sound, we can usually separate it sufficiently from the ovary to distinguish it with ease and certainty.

As regards the treatment of the subacute or chronic oophoritis, I can truly say that there are few instances of local inflammation where a previous knowledge of its cause is so essentially necessary to its successful treatment as in the present case; and I freely confess that in proportion as I have become better acquainted with the

causes of this affection, so have I gradually depended less on local antiphlogistic and derivative treatment as the sole means of cure, feeling more and more convinced that valuable, and even necessary, as such treatment ever must be, it must nevertheless play a secondary part to that, the object of which is to remove the cause itself. It is, therefore, of great importance to ascertain, as far as possible, the precise nature of the cause which has produced the affection, for without it our local treatment, however appropriate and energetic, will have little chance of giving permanent relief. Whether, therefore, it arises from functional disorder, as, derangements of the digestive organs, constipation, rheumatic-gouty diathesis, or from causes of a more local character, as, an imperfectly cured attack of oophoritis, a previous abortion, obstructive dysmenorrhœa, displacement or pressure upon the ovary, as in retroversion or uterine tumor, the cause of the ovarian suffering must be accurately investigated, and if capable of relief, we shall then find but little difficulty in relieving the oophoritis itself. For the diagnosis and treatment of these various conditions, I must refer the reader to the preceding chapters upon these subjects. Under almost any circumstances, it will be desirable to clear out the bowels two or three times by a brisk mercurial purge, as it seldom fails to relieve, more or less, the ovarian congestion. If the symptoms of inflammatory action be still sufficient to require the use of leeches internally, they must be applied according to the rules I have already given under the head of acute oophoritis, or a sufficient amount of relief may be obtained by the more easy application of them to the anus itself. In those cases where the tenderness and swelling are well marked in the inguinal region, and the ovary can be felt (or at least its pain produced) by the finger per vaginam, the leeches will be better applied by this canal than by the rectum. These are also the cases where the application of the tartar emetic ointment to the painful spot in the inguinal region frequently proves such an efficacious remedy: indeed, I know of no other remedy which possesses equal powers in these ovarian affections; but it

requires to be applied as a dressing to the part, and fixed on with straps of sticking-plaster, and the application to be continued even for a day or two after the eruption has come out, so as to render it thoroughly confluent, or, in other words, to produce a slough. In milder cases, or where the patients would scarcely bear the use of the antimonial ointment, camphor liniment and laudanum will form a useful application, provided it be not carried so far as to blister the skin. The antimonial ointment also, when used as a rubefacient only, gives great relief in mild cases. Strong poppy decoction as an injection into the vagina and rectum, and suppositories of pil. saponis c. opio into the latter will also be of service. The bowels must be well relieved by mild laxatives and occasional enemata, and the treatment of the cause of the attack (whatever that may be) steadily carried out according to its peculiar nature.

CHAPTER XIX.

DISPLACEMENTS OF THE OVARY.

A VARIETY of displacements of the ovary have been described by authors, and appear to be chiefly of two species—either where the ovary has escaped from the pelvis, as a hernia; or where it has been forced out of its natural situation, either by some displacement of the uterus, or by the presence of some tumor within the pelvis.

The ovarian displacements of the first species are very rare, and mostly congenital, and, in those cases which have been recorded, they do not appear to have produced any great degree of suffering or inconvenience. I will merely enumerate some of the most remarkable ones, as a further investigation of them scarcely belongs to a purely practical work like the present. The ovary has

been known to form the contents of inguinal, crural, and even umbilical herniæ; it has also been found in one of the labia, as in some of those strange cases of congenital malformation which have given rise to the suspicions of hermaphrodites.

Of those which are produced by a displacement of the uterus, the one which is connected with retroversion is decidedly the most important, and I have already alluded to it under the heads of dysmenorrhœa from ovarian irritation, and also of retroversion.

Of late years, I have had occasion to notice a form of ovarian displacement which, as far as I am aware of, has not been hitherto described, and which, on account of the intense suffering it produces, as also the character of its diagnosis and mode of its treatment, is of great practical importance. I allude to where the ovary descends into the recto-vaginal pouch, and occupies a position between the rectum and the uterus, and almost justifying the term *prolapsus of the ovary*.

This displacement is characterized by intense and peculiarly sickening pain about the sacral region, extending to one or other of the groins, and coming on in paroxysms of such agonizing severity, as to render the patient frantic with the intolerable suffering. In some patients, the intermissions of ease are nearly or quite entire; in others, the pain, although divested of its characteristic intensity, never wholly abates. The source of the pain is evidently connected, directly or indirectly, with the rectum, for the passage of feces is frequently attended with some difficulty, and always with great suffering.

The patient describes it as if a partial obstruction existed somewhere up the rectum; the smallest pressure upon which, by the passage of feces, is sufficient to bring on a paroxysm of this much-dreaded pain. At other times, she can scarcely tell what has been the exciting cause of this attack; for, like a fit of tic douloureux, it will frequently come on from no assignable reason, and cause her the severest sufferings for some hours. The pain is said to be quite peculiar, and of a sickening and

utterly unbearable character, the like of which she has never felt before; indeed, from the way in which patients describe it, I presume that it bears a close resemblance to the intense and peculiar sufferings in a case of orchitis. The pain is usually attended with great throbbing, and with a painful sense of forcing, and distension of the tender part, like something strangulated, and amounting almost to bursting.

The menstrual periods are always attended with greatly increased suffering, particularly during the early part of the discharge; this, however, varies a good deal in different patients, and (as far as I have had the opportunity of observing), the discharge is invariably attended with exudations and small coagula. At these times, the whole lower part of the abdomen is frequently tender to the touch, and more or less fever is generally present, probably arising in part from the degree of suffering which has been induced. The tongue invariably shows the dry short-napped fur which is so constantly seen in cases of disease or displacement of the pelvic viscera; the digestive organs are much deranged, and, not unusually, the stomach very irritable, even to a severe degree of vomiting.

On making an examination per vaginam, the patient generally starts with pain the moment the finger touches the os uteri or cervix; but, as I have already pointed out in oophoritis, a little care quickly suffices to show that these parts are not morbidly tender, but that the pain is produced by pressing them against a tender spot, which is behind and to one side, in the direction of one or other of the sacro-iliac synchondroses, or sacro-ischiatic notches. On passing the finger, therefore, behind and to one side of the cervix, and pressing against the wall of the vagina, in the above-mentioned direction, the painful spot is at once reached, and sometimes a slight degree of hardness is perceived.

On examination per rectum, the finger soon reaches the same acutely painful spot which has been felt per vaginam. The patient dreads the slightest touch of it, however carefully applied. It is evidently a convex body, like an enlarged gland, though usually softer, situated in

the recto-vaginal pouch; it is movable, if the patient can bear a sufficient amount of pressure for that purpose, and one or more vessels are usually felt throbbing when the finger presses upon it.

The ovary is generally larger than natural, being more or less swollen from the strangulation produced by its displacement; and, when the swelling is considerable, not only will pain be produced by pressing on the groin of the same side, but the ovary will be distinctly moved on the finger per rectum. From the fact of its mobility can be explained the circumstance of our being able to feel it sometimes lower in the pelvis than at others, and why the patient's sufferings are increased the lower it is felt. Hence, the passage of a solid mass of feculent matter is attended with fearful sufferings; the ovary is pushed down by the mass descending along the rectum, until its attachments are put considerably upon the stretch; a further amount of swelling is produced by the state of strangulation thus induced, and in this condition the fecal mass is at length forced past, to the indescribable agony of the patient, frequently leaving her in severe pain for many hours afterwards.

In other cases the ovary is nearly or quite fixed, apparently having contracted adhesions to the neighboring parts.

It is not easy to speak decidedly as to the causes of this displacement, but I have chiefly or almost solely observed it in women of a lax, flabby habit, prone to constipation, passive menorrhagia, leucorrhœa, and abortion, but most particularly where the uterus has been retroverted. I have already pointed out the fact that ovarian inflammation or irritation is a frequent result of retroversion in the unimpregnated state, arising probably from the tension to which the broad ligaments are exposed, and consequent engorgement of the ovary. But it can undoubtedly occur entirely independent of retroversion, and seems then to be a result of habitual constipation in a feeble relaxed habit of body. The rectum becomes much dilated by this cause, and as large scybalous masses descend through and distend it, they exert, from time to

time, a considerable pressure upon the left ovary from above downwards, so that, its attachments to the uterus becoming gradually elongated, it at length descends into the recto-vaginal pouch, as above described.

The diagnosis is not difficult, for the pain is quite peculiar. It is of a forcing, throbbing character, so sickening and utterly intolerable, as to be entirely different from any other pelvic pain which a woman can suffer. Its seat is referred to the upper and posterior part of the vagina, usually somewhat to the left side, where the ovary can be felt, especially on examination per rectum. In some cases, and these have appeared to be the worst, it has been nearly in front of the sacrum, and at times it has been pushed down as low as the coccyx, the suffering, as might be expected, being in proportion to the amount of detrusion.

Although the chief object of our treatment is to restore the displaced ovary to its natural position, it will not always be possible for us to attain this in the first instance. The ovary is perhaps so detruded, so swollen and fixed, and the slightest touch produces such agony, that any attempt to raise it by the finger would not only be out of the question, but would probably injure the structure of this delicate organ in its present state of congestion.

Our first indication will be to rouse the liver, and clear the intestinal canal as effectively but as gently as we can. A mild alterative should be given over night, and the contents of the bowels rendered more or less liquid by repeated doses of a saline laxative the next morning, the action of which may be also promoted by a large enema of warm water, provided she can bear it. In some cases, after the first suffering produced by the action of the medicines is over, she feels relieved; the painful sensation of throbbing and forcing has abated, and on examination the ovary has evidently risen higher; it is smaller, and its intense tenderness has considerably diminished. More frequently, however, the mere action of medicine will not effect so favorable a result, and the application of leeches, in the manner I have already described (see

"Oophoritis"), becomes necessary, and we shall still further allay the irritability of the part by opiate suppositories introduced into the rectum. Having thus removed pressure from above, and lessened the bulk of the ovary by the leeches, we shall now find the prone couch not only a valuable means for giving ease to the patient, but of gradually restoring the displaced organ to its natural position. In fact, the same rules which I have already given for the use of the prone position in retroversion, apply equally to the present case. The position on the knees and elbows for a minute or two before assuming the ordinary prone position, is frequently of great value, and the patient becomes instantly aware that the ovary has moved, by the sudden relief which she now experiences.

CHAPTER XX.

OVARIAN TUMORS.

THE subject of ovarian tumors is one of such extent and variety, that if considered fully in all its details, it would assume dimensions quite incompatible with the limits which I have assigned myself. It would indeed be foreign to the strictly practical objects of this work to describe every form of disease to which the ovaries are liable, or even to enter minutely into the pathology of those affections which are most commonly met with; nevertheless a short summary of their results is too important to be entirely omitted, and will be found necessary for establishing correct views respecting their nature.

The ovarian disease which occurs most frequently, and with which medical men are most familiar, is commonly known by the name of *ovarian dropsy* (hydrops, or hygroma ovarii). This has long been divided into two forms—

The simple cyst;

The multilocular or compound cyst;—forms which differ so essentially in structure, nature, and progress, that I shall be justified in considering them as separate and distinct diseases.

The simple ovarian cyst arises either from the broad ligament or peritoneal indusium of the ovary, or it consists of a single Graafian vesicle, which has gradually increased in size from the accumulation of fluid, until it occupies a considerable portion of the abdominal cavity; in which case it is formed by the dense fibrous tissue which constitutes the tunica albuginea of the ovary—the investing membrane of the parenchymatous structure or *stroma* of this organ, and covered by an expansion of its peritoneal indusium. The lining membrane of these simple cysts appears also to have been furnished by the lining membrane of the Graafian vesicle, which from the remarkable changes which it undergoes, and powers of development which it exhibits in connection with impregnation, would seem well calculated, in a state of disease, to furnish the fluid contents of the cyst. It is a simple cyst distended with fluid, and from the earliest periods that its size will permit of examination, it displays the physical characters which belong to such a tumor, viz., it is soft, elastic, and fluctuating.

The multilocular, or compound ovarian tumor, is an entirely different disease: in its early stages it has no right to the term *dropsy*, *hygroma*, *hydrops*, &c., for it is solid, hard, and of considerable density. It is only after the disease has made considerable progress that its contents undergo certain changes, by which they become more or less fluid; and so far from standing in any relation to the simple cyst, the profound researches of Professor Virchow, of Würzburg, show “that it must be placed as colloid disease¹ by the side of goitre, and that the multilocular

¹ A similar view was thrown out more than fifty years ago by Portal, in his *Cours d'Anatomie Médicale*, vol. v. p. 547, and which has been also referred to by Professor Virchow: “J’ai soumis à des recherches un très grand nombre d’ovaires tumescés, et je les ai plusieurs fois trouvés pleins de diverses matières stéatomateuses: les uns étoient durs comme du plâtre; d’autres étoient mous et remplis d’une ma-

ovarian dropsy must be looked upon as a termination of colloid disease." (*Verhandlungen der Gesellschaft für Geburtshülfe zu Berlin*, vol. iii. p. 195.)¹

"Colloid growth forms, if not the largest, the heaviest tumors which are observed in the ovary. On dissection it commonly appears as an irregular nodular, and pretty firm tumor, which is frequently united to the adjacent parts by adhesions of coagulable lymph, and covered by a ligamentous capsule, in which numerous broad flat veins take their course. Even before cutting into it, especially after removing the ligamentous capsule, the tumor will be observed to consist of numerous cysts, varying in size, and on making an incision, we find them in countless numbers, and in every possible variety of size, from those which are so minute as to be scarcely visible, to masses as large as a man's fist, or a child's head. All these cysts are furnished with walls of different thickness, in which vessels of considerable size may frequently be observed, and which are filled with a semi-transparent whitish or grayish jelly, of the consistence of tough mucus, which easily separates from their parietes, and exudes on the cut surface from the various cysts in the form of cylindrical or flattened masses—so that the tumor may be distinguished into a reticular stroma, forming irregular mesh-like cavities (alveolæ, areolæ) and the gelatinous material which fills them." (*Op. cit.*, p. 198.)

The formation and development of cells in multilocular tumor of the ovary, occurs to such an extent, and in

tière de diverses couleurs, qui n'avait que la consistance du suif ou du miel." . . . "Les matières qui forment l'engorgement des ovaires, ne passeroient-elles pas successivement d'un état à l'autre? la substance pultacée ne prendroit-elle pas le caractère du suif, et celle-ci l'aspect du miel? Enfin, celle-ci ne dégénéreroit-elle pas en pus plus ou moins parfait, etc.? Il semble que le résultat des observations prouve la dégénérescence successive de ces humeurs."

¹ In quoting the expression, "colloid disease," from Professor Virchow's paper, it will be understood that he does not refer to the colloid or alveolar cancer, to which disease Rokitsansky solely confines the term "colloid." Professor Virchow distinctly denies the malignant or cancerous nature of colloid ovarian disease, and considers that it differs essentially from the colloid cancer, which he has only once met with in the ovary.

such countless numbers, as to entirely disprove the supposition that these cells had originally been Graafian vesicles: the fact, also, that a similar cystic disease takes place in other and very different structures to that of the ovary, is still further evidence against this view.

This disease is classed, by Professor Virchow, under the head of struma, and, as I have already mentioned, is placed by him along with bronchocele. Rokitansky, while recognizing no other form of colloid but alveolar cancer, has, to a certain extent, expressed a similar opinion in pointing out the affinity which exists between colloid disease and certain forms of cystic growth in natural structures, and has also instanced the close relation which exists between it and bronchocele. This view is abundantly verified in our daily experience of the class of patients who are the subjects of this disease; their appearance, form, &c., fully justifying the application of the epithet *strumous* to them. Dr. F. Bird, in an admirable series of papers of great practical value, on ovarian tumors, remarks, that "ovarian tumors are far more frequent in the strumous than in any other constitution. In a large proportion of my own cases," says Dr. Bird, "struma has been well marked; and limiting myself at this time to the one hundred examples to which I have alluded, indisputable evidence of the strumous diathesis has been present in forty-one, whilst in many others a tendency to struma appeared to exist, but was not indicated by sufficiently certain signs to allow of their being justly added to the number. In several of these cases, there was the history of having previously suffered from some disease of an essentially strumous type, and in some phthisis was found to have destroyed collateral branches of the families, or to have co-existed with ovarian disease in the individuals themselves. In the progress of several cases, also, it happened that supervening inflammation, by its modified results, furnished additional proof of the strumous tendency. In this frequent association with struma is probably to be found the explanation of the fact, of persons suffering from ovarian disease seldom evincing tolerance of mercury." (*Med. Times*, Aug. 2, 1851.)

From the researches of eminent pathologists, and from the characters of analogous cyst formations in normal structures, we may infer that colloid disease of the ovary commences in the form of "minute cysts, with walls of a coarse fibrous tissue, lined with epithelial cells, and filled with a gelatinous substance. As this latter increases, and as this increase takes place not only in all the cells, but also from the continued formation of fresh cells among the old ones, the ovary becomes enlarged, its fibrous coverings more distended, and the separate alveolæ grow in that direction where there is least resistance, viz., towards the periphery." (Virchow, *op. cit.*, p. 206.)

In the early stage of the disease, when the growth is still dense and semi-solid, its surface is usually smooth and even, but as it increases in size, and the pressure on the peripheral cysts becomes more unequal, not only do some undergo a more rapid growth, where the pressure is less, and the supply of blood more free, but many cysts break down into each other, forming larger cavities, or communicate with each other by pretty wide openings. As the supply of nutrition is gradually cut off by the pressure of the continually increasing cysts below, a variety of changes take place in the contents of these cavities, which must be looked upon as a natural termination or death of the colloid growth. In the larger cavities this gelatinous structure, which, as Dr. Baillie remarked, "is sometimes so tough, that it can be drawn out to a considerable length, and when it breaks, it passes back with a great deal of elastic force"—(*Morbid Anat.*, 8vo. p. 391), now gradually loses its firm gelatinous character, and slowly degenerates into a thick, slimy fluid, varying considerably in color and consistence, but usually glistening with minute crystalline plates of cholesterine.

The smaller cysts, which have not broken down into each other previous to their nutrition being cut off by the gradually increasing pressure of the surrounding growth, undergo changes of a different character, which may be detected on microscopic examination. "The columnar portions of colloid substance," says Professor Virchow, "become surrounded with a squamous covering

of crystalline, or minutely granular fatty matter, in that form which we have learned to recognize as one of the stages in the process of cell degeneration." (*Op. cit.*, 198; see also his *Archiv. für Pathol. Anatomie*, i. p. 149.) This fatty matter, in the further progress of degeneration, appears to be a source of that imperfect puriform matter which is frequently found in the smaller cavities of a multilocular ovarian tumor. In others there is an admixture of blood more or less decomposed, so that after a certain stage of the disease we find the upper part of the tumor to consist of two or more chief cavities, containing a large quantity of fluid, the *débris* of the contents of the cysts; while below, where the colloid growth is still in process of active development, the lower part of the abdomen and pelvis is occupied by a solid mass.

It is thus we can explain the view of Professor Virchow that multilocular ovarian tumor is a termination of colloid ovarian disease.¹

A question of great importance presents itself at this stage of the inquiry, viz., whether the colloid ovarian disease (of which the multilocular ovarian dropsy, according to Professor Virchow, is but the termination) is identical with the true alveolar or colloid cancer; this, from the results of his elaborate researches, he denies,² although he acknowledges the great resemblance which exists between these two species of tumor. The various reasons against the malignant character of multilocular ovarian dropsy have also been admirably stated by my late friend, Mr. Safford Lee, and are referred to by Professor Virchow as entirely expressing his view of the subject. "Whatever may be the appearance of the complicated structure of ovarian tumors (says Mr. Lee), we never have them producing the effects of malignant disease; nor can they be recognized by their symptoms.

¹ In an interesting lecture upon this subject he says: "Vielleicht wird es Sie überraschen, zu finden dass ich zwischen den Hydrops ovarii und den Colloid unmittelbare Uebergänge statuiren, ja den ersteren aus dem letzteren herleite."

² "So dass ich die bösartige oder krebsige Natur dieses Colloids durchaus läugne." (*Epist. cit.*)

There is not a case on record where the colloid-looking portions of the cyst have spread to or communicated disease to neighboring tissues. The cysts may become adherent to the viscera of the abdomen, and discharge their contents through the cavities of each for years, without producing in them any morbid change resembling cancer. The tumor itself may be removed, and cancer has never been found to reappear in the pedicle. The symptoms which accompany these growths are not those of cancer; they may continue for years, and then only kill from their encroachment on vital viscera." (*On Tumors of the Uterus and its Appendages*, p. 200.) Professor Virchow also points out that "the terminations of ovarian colloid are at least hitherto unknown in alveolar cancer." (*Op. cit.*, p. 213.)

The early symptoms of ovarian dropsy are, with few exceptions, extremely obscure; in many cases the being able to feel a tumor at the lower part of the abdomen, usually on one side, and apparently rising out of the pelvis, is the first indication of its presence. Many patients acknowledge to having suffered, from time to time, a good deal of pain at one side of the pelvis, but not sufficient to have excited any peculiar attention; whereas in more rare cases I have now and then seen the disease follow a smart attack of oophoritis. In these cases the growth of the tumor was extremely rapid, and the various symptoms proportionably severe. In one case which I had the opportunity of watching from its first commencement, the ovary (right) was at first hard, tender, and somewhat swollen; a constant sense of uneasiness gradually became one of pain; then this was accompanied by a feeling of fulness and distension in the part; darting pains were superadded after a while; then great pain about the upper part of the rectum, produced by the passage of the feces, as if there were an obstruction, exciting violent straining, and the sensation of something which was extremely painful being forced down. This was evidently the enlarged ovary pressing upon the rectum, and occasionally detruded by the fecal mass as it descended. After a while the ovary passed

through the superior aperture of the pelvis, much as the uterus rises in the third month of pregnancy, and could now be felt at the lower part of the abdomen on the right side.

When the swelling has attained a considerable size, the following symptoms are usually observed: "The patient feels, on the affected side (which is usually the left), a dull heavy pain, with difficulty in moving the leg of that side, and more or less cedema; a circumscribed tumor may now be felt in the iliac region, seldom affording distinct marks of fluctuation when percussed, but gradually increasing in size until it fills the whole abdominal cavity." (*Carus Gynakologie*, vol. i. s. 543.)

"This form of disease seldom shows itself much before the twentieth year of life, and generally much later, and is not, like the simple cyst, unexpectedly discovered during the examination of children or young persons, who have died from other diseases. The first recognized symptom is usually a tumor, not altogether void of pain, in one of the inguinal regions, and which, on examination, evidently rises out of one side of the pelvis, and even at this early period is sometimes distinctly lobulated, or uneven, in its form, and unequal in the resistance its different parts afford on pressure. The growth of this tumor is, on some occasions, so unperceived, that, though it may have originated on one side, it has already risen into the pubic, or even the umbilical region; and when the medical man is first consulted, its lateral origin is with difficulty ascertained. At other times the enlargement is at first slow, and after some indefinite period, the increase takes place suddenly, so that in a few months the whole abdomen presents to a common observer the size and appearance of pregnancy far advanced." (Dr. Bright, *Guy's Hospital Reports*.)

This increase of size, unaccompanied by any active symptoms, is usually due to the formation of one or more large cysts, either by their more rapid enlargement, or, what is probably more frequently the case, by the conversion of many smaller cysts into one large one.

Few diseases requiring manual examination for their

diagnosis present such an extent and variety of physical evidence, and afford such an amount of diagnosis on numerous important points as this does. To have satisfactorily distinguished it from any other abdominal enlargement, pregnancy, ascites, &c., is but the first step in the investigation. The number and position of the cysts, their gelatinous or fluid contents, the precise extent of the tumor, the amount of solidity below, its adhesions to the neighboring parts, its complication or not with ascites, &c., require careful and acute observation, and intimate acquaintance with the subject.

The form of ovarian tumor generally becomes more equally spherical, and its surface more even in proportion as it increases in size: for, as any deviation from an even or uniform shape implies unequal distension of the abdominal walls, so also does it imply unequal pressure upon the cysts within; and the consequent breaking down of those which are imperfectly supported, soon equalizes the pressure, and renders the enlargement uniform.

An unequally shaped abdomen betokens a large amount of solid matter, and several moderate sized cysts, instead of one or two large ones; and on applying the hand, we feel, in the former, a variety of nodular inequalities here and there; in the latter, a uniform spherical elastic mass. Even where the abdomen is perfectly uniform, and consists of one large cyst at the upper part, we shall seldom fail to detect smaller ones, and solid matter, in the lower portions, especially on one side.

Unless bound down by peritoneal adhesions, the position of an ovarian tumor is fairly central, and, like the uterus during pregnancy, it pushes the intestines upwards, backwards, and to the sides. It rises out of the pelvis, resting on the brim; the uterus is either behind or directly under it, in which latter case it is usually displaced, the fundus being either anteverted or retroverted by the superincumbent pressure.

"Perhaps no condition could be more favorable for the employment of percussion as a diagnostic means, and

accordingly it is found to possess much utility. By its aid the boundaries of the tumor can be distinctly ascertained. Commencing by accurately percussing below, and traversing, inch by inch, the whole mesian line, uniform and marked dulness is elicited, until a spot is reached at or near to the ensiform cartilage, varying according to the size of the tumor, at which the dulness is abruptly changed for tympanitic resonance, and so clear and distinct is this line of demarcation in the greater majority of examples, that the upper boundary of the tumor can be readily mapped out. If next the same careful percussion be made parallel with the mesian line from below upwards, on either side of the abdomen, through the lateral regions, the same dulness will be remarked, until a spot near to or below the cartilages of the ribs is reached; then dulness ceases as abruptly as before. This spot, on either side of the abdomen, will be found to be an inch or two lower than that at which in the mesian line the dulness on percussion ceased. A line traversing these three spots will describe a curve—it is the fundus of the tumor. If the percussion be now made in a line on either side from the linea alba outwards into the lumbar regions, and a longitudinal boundary between dulness and resonance be thus ascertained by percussion, less marked, it may be, than in the former examination, but still evident, such boundary will mark the position of the lateral portions of that space which is found dull on percussion; they will unite with the curve already detected above, and thus form an ovoid outline—the outline of the ovarian tumor." (Dr. Frederick Bird, *Medical Times and Gazette*, March 6, 1852.)

Percussion not only reveals the extent of the tumor and corresponding displacement of the intestines and stomach, but it is most valuable also in determining the existence, position, and extent of cavities distended with fluid. By carefully tracing the sensation of fluctuation, we not only ascertain the size of the cavity containing fluid, but also the character of that fluid, and whether the fluctuating mass is simple or intersected with one or more septa. If the space between the two hands be a single

cavity distended with fluid, the reverberation felt by the hand opposite the point of percussion will be clear, sharp, and well defined, a distinct space of time, which is required for transmission of the undulation, intervening between the two. "If both hands" (says Dr. F. Bird) "equally feel fluctuation, it may at once be inferred, that at that part of the tumor, at least, fluid alone exists; but if one hand only perceive fluctuation, then the part covered by the opposite hand is the seat of some secondary cyst, or condensed or solid structure. Step by step, the hands alternately percussing and perceiving, are to be slowly carried to the iliac regions, until all the lateral boundaries have been carefully examined. If fluctuation has been everywhere and equally felt by either hand, the conclusion may be arrived at, that the ovarian tumor, if it be such, consists chiefly of one large cyst, or is what is termed unilocular; if, on the contrary, the fluctuation has not been felt at certain points, although distinct at others, the parts at which it failed to be detected should be separately examined as to their inelastic hardness and dulness on percussion, and thus their precise character be determined, whether as condensed and solid formations within, and attached to the parent sac, or as collateral disease or displacement of healthy structures externally to it." (*Medical Times and Gazette*, July 24, 1851.)

Experience shows that the fluctuation, even, of the same cyst, may undergo considerable modifications depending on the tenseness of its walls. If these are firm and unyielding, so that the pressure of the increasing fluid is very great, the fluctuation becomes less and less distinct, so that in some cases of extreme distension it is nearly imperceptible.

In the early stages of ovarian disease, even if the mass has risen sufficiently into the abdominal cavity, it is hard and solid, or perhaps indistinctly elastic; but as large cysts are gradually formed by the breaking down of the smaller ones, percussion can at length be transmitted in various directions, but not with the well-known undulation where fluid exists. Instead of a distinct interval between

the percussion on one side and the fluctuation on the other, the sensation is *simultaneous*, and has been very properly pointed out by Dr. Bird as the result of "*impulse*." It is not an undulation of fluid, but the transmission of an impulse through a semi-solid elastic mass. This is a point of great practical value, as it shows that the contents of the tumor are not fluid, and therefore not capable of being removed by tapping. On the other hand, we frequently meet with cysts of this colloid character, which at first had produced the impulse on percussion now described, but where, as the disease advanced, fluctuation gradually became more and more apparent in proportion as the gelatinous contents broke or liquefied down into that thick, slimy, brown fluid which is so commonly observed in these cases.

A large number of those ovarian tumors which are called *unilocular*, from the main bulk of the mass being formed by a single cyst, are nevertheless of the colloid character, as described by Professor Virchow; one cyst has enlarged beyond the rest, or a mass of cysts have broken down to form one large cavity, while the mass of solid disease below is still too small, and probably too deep in the pelvis, to be felt through the abdominal parietes.

Examination per vaginam is another important means in the investigation of these affections. If we have the opportunity of examining at an early period, we shall find that the lower and solid portions of the tumor may usually be reached with the finger, and its dimensions, hardness, and position ascertained. If it still occupies the cavity of the pelvis, and is closely pressed against the uterus, so that it is difficult to distinguish the one from the other, the uterine sound will be of great value; for being, by its means, able to fix or to move the uterus at pleasure, we can not only ascertain the size and position of the uterus, but, by pulling it to one side, we can separate it from the abnormal mass, and thus distinguish the one from the other.

If it be a simple cyst, whether arising from the ovary or broad ligament, the absence of any solid mass of disease occupying the upper portion of the pelvic cavity will

greatly assist in determining its true character. In either case, as the tumor increases, the uterus becomes variously displaced; sometimes it is dragged up, the vagina much elongated, and tapering towards its upper extremity, where the os uteri can be reached with difficulty by the finger, the cervix being indistinguishable from the great tension of the vagina. In other cases, the uterus is pushed down to the inferior aperture of the pelvis, the os uteri turned up in one direction, the fundus forced down in another. The bladder is generally much pressed upon, and sometimes the urethra dragged upwards, as in cases of retroversion during pregnancy.

The only diseases with which ovarian tumor is liable to be mistaken are ascites and fibrous tumor. The diagnosis from ascites is not only the most important, but it is also the most difficult, the more so, as ovarian tumor is occasionally complicated with ascites; indeed, when, from its size, the distension of the abdominal walls has become very severe, the abdominal circulation seriously obstructed by the pressure, we shall almost always find a certain quantity of ascitic effusion coexisting.

In ovarian tumor, when the patient lies in the horizontal posture, the most elevated portion of the abdomen is the umbilical region, which is prominent, rounded, and tense, whereas the lumbar regions are much less distended. On percussion, we find the whole anterior portion of the abdomen dull, for the cyst lies in front, having, as I before observed, pushed the intestines upwards, backwards, and to the sides; we can, therefore, only detect their resonance close under the margin of the ribs, and deep down behind, towards each side of the spine. In ovarian tumor, the fluctuation of fluid is seldom perfect or equally distinct in every part or direction; the results also of a vaginal examination generally show the existence of it by the displacement of the uterus, and more especially by the solid mass of abnormal structure which occupies the upper part of the pelvis.

In ascites, the form of the abdomen (when the patient is in the supine posture) is different to that I have described in ovarian tumor. The umbilical region is neither rounded,

prominent, nor peculiarly tense, but frequently this part is inclined to be flatter and less elevated than the rest of the anterior surface of the abdomen. This arises from the gravitation of fluid to that part of the abdominal cavity which is lowest, and which in the recumbent posture is necessarily the spinal portion. Instead of the whole anterior surface of the abdomen being dull upon percussion, in ascites it is strongly resonant, the inflated intestines floating immediately beneath the anterior wall, and resonance being also detected in many other parts of the abdomen, where it is never heard in ovarian tumor. There are, however, two exceptions to this rule which require to be mentioned. 1. That when the accumulation of ascites is very large, the intestines cannot rise to the anterior surface of the abdomen when the patient lies in the supine posture. 2. If the intestines be extensively glued together, and bound down by bands of peritonitic effusion, they are prevented rising towards the anterior surface, so that in either of these cases we may have ascites without any tympanitic resonance in the umbilical region, which is usually detected when the patient lies on her back. The same cause (previous inflammation) may have fixed portions of intestine to the abdominal walls, so that resonance may be heard, under these circumstances, along the sides, or perhaps even in front.

The stethoscope, also, is occasionally a useful adjuvant in the diagnosis between ovarian tumor and ascites, by detecting the sounds produced by the movements of flatus in the intestines; but it must be recollected that these sounds can be transmitted to a considerable distance through the sac. I have repeatedly heard them when a considerable portion of the cyst lay between the intestines and that part of the abdominal wall to which I had applied the stethoscope, but the sound is feeble and distant, very different to that which is heard when we auscult the anterior surface of the abdomen in ascites. In ascites, when the patient lies in the recumbent posture, the lumbar spaces, being distended with fluid, are full, bulging, and dull on percussion, and therefore very different to the undisturbed resonant condition of these

parts in ovarian tumor. The character of the fluctuation, as Dr. Bird remarks, is not without value as regards the diagnosis between ovarian tumor and ascites, "in the former case being, if not interrupted by secondary formations, sharp, quick, and distinct; while in the latter, it is more dull, diffused over a greater space, and not so quickly induced." (*Opus citat.*)

On examining per vaginam in ascites, we never find the uterus dragged almost out of reach, the vagina tense, elongated, and tapering to a small orifice at its upper extremity; nor do we meet with those displacements which I have described in ovarian tumor; neither is the superior aperture of the pelvis roofed with solid growth, as in these cases. The uterus is in its natural position, or if the accumulation of fluid be great, and the pressure considerable, it may be somewhat depressed, or prolapsed. By percussion on the surface of the abdomen with one hand, we can frequently detect fluctuation per vaginam with the other—this is rarely observed in ovarian tumors, and even then but indistinctly. The history, also, of the two diseases is very different. Ovarian tumor has commenced from the lower part of the abdomen, and usually from one side, and throughout its whole course has been a well-marked circumscribed tumor; it has probably existed for some time with little or no disturbance of the patient's health; whereas, in ascites, there never has been any circumscribed tumor from the very first, and it has been preceded and attended by serious derangement or disease of important organs.

When these two diseases occur together, and are, therefore, complicated with each other, if the patient lies on her back with the knees drawn up, so as to relax the anterior wall of the abdomen, we shall detect a shallow layer, or stratum of fluctuation, which responds to the slightest percussion; and beneath this, at a distance varying from a quarter of an inch to even more than an inch, we shall detect the firm hard surface of the ovarian cyst, which, with stronger percussion, will also yield distinct fluctuation, but of a different character. The superficial fluctuation (ascitic) is dull and soft; the internal

and deep fluctuation (ovarian) is, as Dr. Bird has well described it, "sharp, quick, and distinct."

The diagnosis between ovarian disease and fibrous tumor of the uterus, presents but little difficulty; it is, however, chiefly, by the vaginal examination that this can be determined; the great point to be borne in mind is, that in the one the uterus forms the tumor, in the other it does not. Whether displaced or not, the uterus is evidently much enlarged, and pressure on the tumor above the symphysis pubis will instantly show that it is continuous with that portion of the uterus which occupies the pelvic cavity. If the uterine sound be introduced, it will pass to a considerable distance, showing that the elongated uterine cavity extends into the solid mass above the symphysis pubis. The only possibility of an error which might occur, would be in those rare cases where a large cyst has occupied a considerable portion of a fibrous tumor of the uterus; and cases have occurred where this has been tapped, and the fluid drawn off; but even here, I should think that a careful examination per vaginam, would establish the identity of the uterus with the tumor, although it might possibly not lead to a different practice than what was adopted in them.

Although there is but little risk of confounding ovarian tumor with pregnancy, under ordinary circumstances, yet complications are occasionally met with which are puzzling. The most difficult are where the pregnancy is still early. The great point in these cases to be ascertained is whether the uterus be enlarged or not; if this be the case, the condition of the os and cervix will be an important guide in directing our suspicions, but it is still too early for the use of the stethoscope; the other symptoms of pregnancy, when thus complicated, would afford but little certainty. As pregnancy advances, the diagnosis, although still beset with difficulties, becomes less doubtful; the gradually increasing size of the uterus, and the presence of those changes in the os and cervix uteri which are peculiar to pregnancy, point out this condition more distinctly. It must, however, be remembered that pregnancy can never exist complicated with an ovarian tumor of

considerable size, or with one, the growth of which is proceeding rapidly; and even if the complication did occur under such circumstances, the pregnancy could not possibly be of long duration.

The constitutional treatment of ovarian tumor presents, as regards its results, but little that would encourage us to hope for success. A variety of remedies has been praised in this disease, but each in succession, after a short-lived favor, has sunk into oblivion, the one extreme being probably as unjust as the other. Of these, the preparations of iodine and the liq. potassæ, appear to possess the greatest claims on our attention.

The effects of iodine, as mentioned by Dr. Seymour, who speaks highly of it in these cases, are very remarkable: "— the tumor appeared to grow gradually softer; at length very violent constitutional symptoms arose—trembling, great distress of mind, and lowness of spirits; to which succeeded the symptoms of internal suppuration, a very quick pulse, tongue brown and dry, rigors, followed by profuse sweats. At the expiration of a fortnight, the patient began to pass purulent matter by the rectum and vagina, of various consistence and intolerable odor. This passed daily, for some weeks, and the patient recovered." I must confess that I have never used iodine in these cases, either internally or externally, nor have I felt justified in attempting the use of a remedy which (from whatever cause) has failed so invariably in the practice of others, a considerable number of the cases which have come under my notice having previously gone through a course of this medicine without success. It must, however, be acknowledged, that similar results to those observed by Dr. Seymour have been obtained by Dr. Elliotson and Dr. A. T. Thompson, and still more recently by Dr. Jeaffreson; it is, therefore, an important question whether this remedy has been fairly tried, for the results mentioned by Dr. Seymour cannot be looked upon as merely accidental, as the same effects have been described by the other eminent authorities to which I have alluded.

The liquor potassæ has also been highly spoken of as

capable of producing very similar effects to those of iodine, and it certainly has the recommendation of being a more manageable remedy than the iodine, and less apt to produce unpleasant effects.

From the above remarks it will be seen that the treatment of ovarian tumors must necessarily, in great measure, be local, since in the present state of our knowledge the remedies which we possess are at best uncertain. Our chief indications, therefore, as regards constitutional treatment, will be to maintain the general health, as far as possible, in good order, and to prevent those intestinal accumulations which are apt to take place from the pressure of the cyst, and tend greatly to aggravate the patient's sufferings.

Until late years, tapping was the only means we possessed of giving relief, and in those rare cases where it is really a simple cyst (which is very different to the disease which forms the multilocular ovarian tumor), tapping is usually successful, not only in giving immediate relief, but in permanently curing the patient. In the multilocular tumor, the operation of tapping can only be looked upon as a temporary and uncertain means of relief, and is usually avoided by the practitioner, until the increasing abdominal distension begins seriously to threaten the patient's life, from the well-known fact that in most cases the accumulation takes place again with much greater rapidity than it did before. "Not many days (says Dr. Bright) elapse before the regular and spontaneous tightening of the bandage with which the body has been swathed, and which percussion shows to depend on no accidental evolution of flatus, gives warning of the speed with which fresh accumulation is taking place; and there is too often reason to believe that the rapidity of the effusion is increased by the withdrawal of the fluid. The nodular masses become again indistinct; in the course of a few weeks the abdomen has arrived almost at its former size; and perhaps before two or three months have elapsed, the operation must again be performed. It may be that the patient still retains a fair state of general health, but if the accumulation be rapid, the system soon begins to

suffer, the body to emaciate, the countenance to fade, and if pain be added, as is not unfrequently the case when the disease assumes its more active and virulent forms, the sufferings of the patient greatly reduce her strength. The interval between the operations becomes less, and at length, after the lapse of an uncertain number of months or years, she dies worn out. Or, on the other hand, if the suffering continues comparatively slight, and operation after operation be borne without a visible decrease of bodily power or mental energy, yet at length some inflammatory process, apparently accidental, or some state of unexpected collapse, for which no reason can be ascribed, takes place, and the patient sinks. To assign any precise or specific time to the course of this disease from its first appearance till its fatal termination is impossible, the difference in this respect being great; but from what I have myself observed I should be inclined to state that cases which continue above four years from the first necessity of the operation of paracentesis bear a small proportion to those which prove fatal before that time." (*On Abdominal Tumors, Guy's Hospital Reports*, p. 12.)

The above remarks apply chiefly, if not entirely, to the ordinary form of ovarian dropsy, which is compound or multilocular; but in those rare cases where it is truly a simple cyst, without any cell formation beneath, the results of tapping are far more favorable, and not unfrequently quite successful. "I am not sure (says Dr. Bright) that I can recall to my memory a single dissection where the simple ovarian cyst has been the cause of death, or has even advanced to such a size as to be the subject of material inconvenience to the patient during life." (*Op. cit.*) Even with the multilocular cyst, the operation cannot always be looked upon as an unavoidable step which we are compelled to take in order to keep off immediate danger, for cases frequently occur where, the further growth of the tumor having ceased, the cyst continues to fill, and requires to be emptied from time to time. The celebrated case recorded by Mr. Martineau, of Norwich, is one of the most remarkable of this sort: the patient was tapped eighty times, over a period of some years, and life

was thus prolonged for some time in tolerable comfort. These cases, however, are exceptions to the rule, and it is rare to find that the operation can be repeated more than two or three times.

Besides the relief which the patient experiences from the operation of tapping, by the removal of the constant sense of weight, distension, and dragging, her respiration, which was short and oppressed, becomes free; the lower parts of the chest, which were dull on percussion, and without the ordinary sounds of respiration, are now resonant and permeable to air. The heart, which is sometimes pushed upwards to an extraordinary height, even up to the left clavicle, gradually descends to its normal position, and its action becomes more natural. The lungs recover their healthy condition immediately; the heart more slowly, so that it is several days before it is again heard quite in its right place. This period is not always without suffering or even danger to the patient; the heart is easily roused to abnormal and turbulent action; and frequently retains an unnatural degree of rapidity for some time.

It occasionally happens that on examining the abdomen three or four days after the operation, we shall find it distended with a considerable quantity of fluid. This is no new formation, but simply results from the rupture of many smaller cysts, which being no longer supported by the pressure of the larger one, have given way and poured their contents together.

It is difficult to determine with any degree of precision, what are the indications for performing the operation of tapping in ovarian dropsy. Looking at the results of tapping, I come to the conclusion that it should seldom be resorted to, except for the purpose of averting impending and inevitable danger, and where the case is not one of those few which offer a fair opportunity for extirpation. The conditions necessary for this operation are, in fact, but two—the presence of fluctuation, and a sufficient amount of strength to give the patient a fair prospect of surviving the operation. For the rest, we cannot choose our circumstances. The tumor is steadily increasing;

visceral pressure and displacement are becoming daily more serious, and the patient is evidently beginning to sink. I apprehend that these are the ordinary circumstances under which tapping is most usually performed in multilocular ovarian dropsy. So long as the mass is stationary, or nearly so, and has not attained such a size as to interfere with the patient's health, I should not consider tapping to be indicated. With a single cyst, however, it is very different. The presence of fluctuation in every direction, even from an early period, and the absence of an amount of solid matter at its lower part, would, if its increase be steady, justify tapping at an earlier stage than in the other case, from the fact which I have already stated, that simple cysts seldom fill again. The correctness of our diagnosis in these cases will be the great element of our success.

How far the injection of iodine, or other substances, into an ovarian cyst after the evacuation of its contents will prove successful, remains still to be seen. Several cases have lately been treated upon this plan by Dr. West and Mr. Paget, at St. Bartholomew's Hospital, but the results have not yet been published.

Cases now and then occur where nature relieves herself by the rupture of the cyst within the abdominal cavity. Sometimes the patient is aware of something having given way within; at other times she is unconscious of what has taken place until its effects begin to manifest themselves. The secretion of urine is inordinately increased; the urine is commonly high-colored and thick; this, however, is not always the case, as in a patient now under my care, in whom several small cysts have evidently given way, it has undergone no peculiar change beyond the unusual increase of quantity. Besides discharging the effused fluid by the kidneys, the system relieves itself by profuse perspirations, which are peculiar from their disagreeable odor and thick clammy character. The process is generally attended by a good deal of febrile action, as we see in the elimination of pus, milk, &c., from the system in hectic, milk fever, &c.

Sometimes, though rarely, a communication is esta-

blished with some part of the intestinal canal, as seen in the cases reported by Dr. Seymour, &c. A somewhat similar result has occurred in the case to which I have just alluded. The abdomen had attained a considerable size—it was evidently a multilocular tumor—no fluctuation could be detected, but the impulse which I have before described indicated the presence of gelatinous colloid matter. The patient was beginning to suffer seriously from the pressure and visceral displacement which it produced, and also from attacks of excruciating pain; she was, to all appearance, beginning to sink, when she was suddenly seized with violent retching, which ended in her vomiting an ordinary washbasin half full of transparent jelly-like matter, of considerable firmness, with instant and complete relief. For some weeks afterwards, large evacuations continued to pass from the bowels, of a peculiar substance, resembling cod's liver in appearance, and out of all proportion to the quantity of food taken, and the abdomen diminished several inches in circumference. After a time this appearance ceased, and the abdomen again began to swell, with many of her former distressing symptoms. Fluctuation now became evident over a large surface, and Dr. Bird removed the fluid by tapping. It was of the ordinary thick slimy consistence, commonly seen in multilocular ovarian tumors. The abdomen again began to swell, as in the first instance; the respiration was seriously impeded; the heart pushed high up into the thorax; her condition was becoming very alarming, when another attack of vomiting relieved her of a still larger quantity of the same jelly-like matter, and she again began to pass the same peculiar evacuations from the bowels, but in smaller quantity. This was suddenly followed by an enormous secretion of urine, accompanied by the profuse perspirations before mentioned, and the abdomen diminished so rapidly that, in nine days, its circumference lost eleven inches. The history of this case shows that a collection of colloid ovarian matter had burst into the small intestines (probably the upper part), and, in the first instance, had made its way directly into the stomach; that afterwards, when the

escape from the cyst was more slow, it was conveyed along the bowels, and had undergone a species of digestion, as shown by its appearance and consistence when evacuated. The singular quantity of urine, and the profuse perspirations, attended with such a remarkable diminution in the size of the abdomen, were evidence that other smaller cysts, filled with fluid, had burst, now that the support from the pressure on the adjacent cyst had been removed.

It remains for me to mention the extirpation of ovarian dropsy, an operation which has excited much attention during the last twenty years, and, where the cases have been well selected and skilfully treated, has been attended with considerable success, quite sufficient to render it justifiable.

To Mr. Jeaffreson, of Framlingham in Suffolk, is due the merit of having first achieved this formidable operation. The case was one of a single cyst; he made an incision of from ten to twelve lines in the course of the linea alba, midway between the navel and pubes, and having thus carefully exposed the sac, evacuated by the trocar about twelve pints of clear serum. During the flow of the serum, a portion of the sac was secured in the grip of a forceps to prevent its receding, and he afterwards gradually extracted the sac entire from the cavity of the abdomen, together with another sac containing about two ounces of fluid. (*Transactions of the Provincial Med. and Surg. Association*, vol. v. p. 242.) The entire ovary was removed; the pedicle of the tumor, which consisted of the ovarian ligament, and some large vessels, was included in a ligature, and then divided.

From the comparative rarity of ovarian tumors, consisting chiefly of a single cyst, and from the fact that by far the majority, being multilocular, are accompanied with a solid mass of considerable size, it becomes evident that a large incision will be required in most, if not all, of these latter cases. There can be no doubt that an ovarian tumor, consisting of a single cyst, with so little solid matter as to be capable of removal through a small opening in the abdominal cavity, is the most favorable case for this

operation, and the results of twenty-three operations by the small incision, collected by Mr. Safford Lee, and which occurred among fourteen different operators, show that in nineteen the patient recovered; the most favorable results being those of five cases operated upon by Dr. Bird, each of which was successful.

The justifiable or unjustifiable character of an operation must necessarily depend upon its results; it is, therefore, of great importance to ascertain as far as possible the statistics of its success. I have for this purpose used the tables collected by the late Mr. Safford Lee, feeling confident that, as far as they go, the fullest reliance may be placed on the scrupulous accuracy with which they were made.

Mr. Lee has given the results of one hundred and eight ovariectomy operations, which had occurred up to the year 1846; of these, seventy patients recovered, or five cases out of nine. Of these one hundred and eight operations, the tumor was removed by the long incision in eighty-five cases, of which fifty-one recovered, or sixty per cent. In the remaining twenty-three cases the tumor was removed by a short incision: of these, nineteen (or about eighty-two and a half per cent.) recovered, being nearly in the proportion of five out of six. I do not, however, quote these numbers as actual statistics of the operation, as it is more than probable that many unsuccessful cases have occurred which have not been published; but rather to show, whatever may have been the number of operations, that, at any rate, the operation has been performed seventy times with success. And when it is borne in mind that these one hundred and eight operations were performed by fifty-three different operators, and that, therefore, with the exception of Dr. Clay, who performed ovariectomy eighteen times, none could be considered to have had any experience in the details of the operation, its difficulties, dangers, &c., these results cannot be pronounced unfavorable. Of Dr. Clay's eighteen cases, eleven recovered, or rather more than sixty-one per cent.; and even supposing that the proportion of recoveries was no more than this, I should consider an operation with such results, under-

taken solely where death is otherwise inevitable, and not far distant, to be perfectly justifiable. Few, if any, of the great operations of surgery which have shed such renown upon the originators and performers of them—I allude to tying the main arterial trunks, to the excision of the larger joints, and high amputations—can show so large a percentage of successful results; nor, when successful, can they boast of that great and peculiar feature which belongs to ovariectomy, viz., that, with few exceptions, wherever the patient recovers, her recovery is complete and permanent.

Neither can I consider that the results of tapping bear any favorable proportion with those of ovariectomy: the dangers from tapping are neither few nor slight, although usually not so immediate, and therefore not so striking and prominent as those which are consequent upon ovariectomy. Besides the immediate danger of fatal syncope arising from the sudden removal of pressure from the abdominal circulation, there is the danger of fatal internal hemorrhage, not only from wounding a considerable arterial branch in the abdominal wall, but also of wounding some of those large vessels which ramify on and between the cysts of a multilocular tumor. "I have," says Mr. Lee, "now seen several *post-mortem* examinations where these tumors existed, and have observed large vessels, nearly the size of the little finger, ramifying on the sac, and one was placed in such a position, which would have been inevitably wounded had an operation been performed." (*Op. cit.*, p. 168.) These dangers must be chiefly looked upon as accidental; but there is one result of tapping which I believe is sooner or later *sure* to appear, viz., inflammation of the cyst, spreading to the peritoneum, with many of the symptoms of blood-poisoning observed in asthenic puerperal fever, viz., very rapid fluttering pulse, great prostration, and death. In the ordinary cases of tapping, where the patient has escaped what I may call the accidental dangers of the operation, inflammation of the cyst has sooner or later never failed to show itself, with the fatal effects just mentioned.

The operation of tapping, so simple and painless as it

appears, and, in some cases, so entirely free from danger, even when frequently repeated, is nevertheless by no means so successful in the long run as is commonly supposed. "It is admitted by all," says Mr. Lee (p. 175), "that this operation 'is the beginning of the end;' that it will require repetition during longer or shorter periods; exhaustion or inflammation, produced by the operation itself, generally terminating the case." The mortality of forty-six cases, treated by tapping, which have been collected by Mr. Lee, where the results have been accurately reported, show little to recommend this operation.

Of these forty-six cases, thirty-two died in two years, or rather more than sixty-nine and a half per cent.; fifteen died within a month of the operation, and ten within a week, of whom three died within twenty-four hours. It must also be recollected that, with very few exceptions, all these operations were confessedly to obtain temporary relief, and were therefore strictly of a palliative character.

I believe that the two grand elements of success in ovariectomy (the operation being supposed to be skilfully performed) are, *firstly*, determining with the utmost care the great point, viz., whether the case be really one which is adapted for the operation; and, *secondly*, the rigid observance of certain rules of treatment afterwards. I believe that a large proportion of our success in ovariectomy depends chiefly on the accuracy and minuteness with which we investigate the case, and make ourselves acquainted with every circumstance connected with the tumor.

Beyond the diagnosis between ovarian tumors and other diseases, which has been fully discussed, a field of still further inquiry now opens itself, requiring still greater delicacy and precision of diagnosis. Having ascertained the form of the whole tumor, of its chief cysts (if there be many), and their probable contents, it now becomes our duty to determine the amount of solid matter at the lower part of the tumor; the free or adherent condition of its upper and lower part, as regards the surrounding viscera and abdominal walls; the exact position of the uterus and bladder; and, though last, not least, to carefully collect such evidence regarding her general health as shall enable

us to decide whether, other things being favorable, her condition warrants the attempt.

To ascertain the amount of solid matter at the inferior portion of the tumor, we must not only carefully examine the lower part of the abdomen, and also the contents of the pelvis *per vaginam*, but we shall combine these two modes with great advantage, by applying one hand to those parts of the abdomen where we can detect solid matter, whilst with the finger of the other hand we make an examination *per vaginam*. Thus we shall quickly ascertain the size, hardness, and mobility of the mass. By the aid of the uterine sound, we shall ascertain the precise condition of the uterus—whether it is dragged upwards by the tumor, or, as is more commonly the case, more or less retroverted or anteverted by the superincumbent pressure. Above all, we shall make out its precise connections with the tumor—how far adherent or unattached to it. A similar examination of the bladder must also be made, to ascertain its position, amount of displacement, &c.

Another and most important object of inquiry is, to determine whether any, and what amount of adhesion exists between the cysts and the contents and wall of the abdomen. Throughout the wide and varied field of investigation which we have to go over in deciding whether ovariectomy be admissible or not, there is no subject of greater importance, and none the diagnosis of which is more difficult, and yet on the non-existence or existence of these adhesions depends the possibility or impossibility of the operation.

In determining the existence or non-existence of adhesion of the tumor to the anterior wall of the abdomen, the patient must lie upon her back, nearly horizontal, with the knees somewhat drawn up, so as not to increase the tension of the abdominal parietes. Let us now carefully watch the movement of the abdominal surface whilst she breathes deeply. If the anterior surface of the cyst be free from adhesions, its various prominences and convexities will be distinctly seen to descend and ascend beneath the abdominal parietes, according to the action

of the diaphragm; whereas, if it be adherent, the anterior surface of the abdomen will either not move at all, or be merely detruded, *en masse*, to a small extent—the anterior wall, and the tumor beneath, evidently moving together.

The action of the recti abdominis muscles, in moving and compressing the tumor, as pointed out by Dr. Bird, is a very valuable means of testing the presence or absence of adhesion to the anterior abdominal wall. For this purpose, let a shawl or sheet be thrown across the lower part of the abdomen, and over and between the knees, so as not to obstruct the view of the observer stationed at the foot of the bed; and whilst he kneels, so as to bring his eye on a level with the anterior surface of the abdomen, let the patient (with her arms laid along her sides) endeavor to raise herself solely by the action of the abdominal muscles. If the cyst be not adherent, the recti muscles will separate during the effort, and the tumor will bulge between them, assuming a conical form, and will recede as these muscles relax, and again resume its former shape; whereas, if the cyst be fixed to the abdominal wall by adhesions, no such change will take place.

When adhesions exist between the tumor and abdominal walls along its anterior or lateral surfaces, we occasionally feel a peculiar crepitation, either when the patient breathes, or when we endeavor to move the abdominal wall over the tumor beneath: the sensation is just like the creaking produced by new leather, and not only does the patient herself also feel it, but at times can even hear it. It is produced by the presence of adhesions, which are sufficiently loose to allow a slight degree of motion between the two surfaces. The presence of this symptom, when it occurs, is so far valuable, that it indicates the presence and exact position of adhesions, but its absence is no proof of the reverse, because perfectly free, or entirely adherent, surfaces may equally exist without the presence of this symptom. In doubtful cases, the application of the stethoscope might determine the fact.

Tapping may occasionally be turned to useful account,

for the purpose of divulging adhesions which our most careful investigations had failed to discover. "On the withdrawal of the fluid," says Mr. Lee, "the walls of the abdomen are observed to follow closely the contracting cyst, when adhesions are present, and have externally a drawn-in and puckered appearance, while the cyst does not descend into the pelvis; whereas, when the cyst is free from adhesions, it may be found after its evacuation low in the pelvis, forming a hard tumor at the lower part of the abdomen, while the walls of the abdomen may remain free." (*Op. cit.*, p. 190.)

Unless the early history of the case distinctly refers to some attack of abdominal inflammation, and the disease be of long standing, we seldom meet with adhesions of the tumor to the abdominal parietes, so long as its size is moderate; on the other hand, whenever it has attained a considerable bulk, the pressure is so great as to render the existence of adhesions much more probable; and this refers not only to the abdominal walls, but especially to the viscera beneath. In cases where great pressure had been used during the life of the patient after tapping, I have found the posterior surface of the tumors firmly glued to the omentum, intestines, and even large curvature of the stomach. I know of no means for ascertaining the existence of these adhesions, beyond inferring its probability from the patient's previous history, for the anterior surface, and sides of the tumor, may be perfectly free, whilst its posterior surface presents a mass of adhesions.

Lastly, though not the least important, we must consider the state of the patient's health and strength. If the disease as yet has produced but comparatively little suffering or inconvenience—if the various functions of the abdominal viscera have been but little impaired or but slightly deranged—if the powers of the system are still good—if she possesses a fair amount of strength, and her appearance is healthy, the case, as far as general health is concerned, is favorable for the operation. If, on the other hand, the system is suffering seriously from the size of the tumor, the pressure upon and displace-

ment of the viscera—if mucous irritation of the bowels is beginning to show itself, and the heart is seriously incommoded—if the breathing is much oppressed, and she is exhausted with constant suffering, want of rest, irritability of stomach, and consequently want of sufficient nourishment—if, in other words, the powers of the system are giving way at last, and she is beginning to sink under the effects of the increasing disease, the operation cannot be considered justifiable under such unfavorable circumstances; neither is there time now to put her under that course of preparatory treatment which, even under the most favorable circumstances, is a necessary preliminary. We must be in great measure guided in these cases by the examination of the tumor. If it admit of tapping, we can thus give her instant relief, and shall also gain the necessary time for the treatment just alluded to.

A well-arranged course of treatment, for the purpose of regulating the chylopoietic functions, and improving the general health of the patient, is usually successful to a certain extent, in removing many of her symptoms. The bowels are well cleared; the torpid and congested liver has relieved itself and the portal circulation by free secretion; the size of the abdomen is more or less diminished in consequence, and her various sufferings from distension, pressure, and displacement, proportionably relieved. In some cases the effects of such a course of treatment are very remarkable: immense quantities of unhealthy fecal matter are thrown off, and the chylopoietic viscera return again, for a while, to a healthy state of function. Unless the tongue has already become red and glazed, she should take a mild alterative every other night for a few times, and some rhubarb and magnesia, or rhubarb, manna, and *sodæ potassæ-tart.* the following morning: in fact, the same sort of preliminary treatment which I have already described in amenorrhœa, &c. If there be evidences of severe mucous irritation of the bowels, it will be better to put her upon a course of taraxacum and lime-water, regulating the

bowels either with magnesia, or rhubarb and magnesia, in the morning.

The good effects of this treatment may be still further increased by the use of tonics, more especially if the nature of the case has justified tapping, to relieve the immediate urgency of her symptoms, and give her a longer period to regain her health and strength, before proceeding to the operation.

The best time for performing the operation is just after a menstrual period, when the system has been relieved by the discharge, when the circulation is less inclined to febrile action, and any disposition to congestion of the abdominal and pelvic viscera especially lessened. The bowels should be well cleared the day before, not only for similar reasons to those just mentioned, but also to render it unnecessary that they should be moved for the first few days after the operation.

The treatment after the operation which has been adopted by Dr. Bird is well worthy of attention; and from having attended several cases with him, I am convinced that the chances of success are greatly enhanced by it. The temperature of the room is raised to 80° or 85° Fahr., and the air saturated with watery vapor by the steam from a long-spouted kettle, made for that purpose. Perspiration is quickly induced, and rendered still more active by the patient sucking and eating ice, and sipping iced water. The inflammatory action which would almost necessarily follow such an operation, is controlled by this means, as is seen by the excited state of the pulse, the abdominal pain and tympanitis which are sure to come on if the diaphoresis be allowed to subside; and on the other hand, by the quick abatement of the inflammatory symptoms, and the relief which the patient experiences as soon as the skin becomes again moist. The most perfect state of quiet in the supine posture is absolutely necessary; the bladder must be emptied by the catheter as often as she requires it, and an opiate must be given at night, according as her condition indicates it.

In about twelve hours the pulse begins gradually to rise in rapidity, so that in thirty-six hours after the

operation it is seldom less than 124, but with the exception of this rapidity, it is soft, equable, and otherwise natural. During the following night it generally attains its maximum, viz., 130, or even higher, after which it begins slowly to subside. Every successive twelve hours shows a further diminution of rapidity. This favorable change in the pulse is an indication to lower the temperature of the room. She is now able to take a little light nourishment, and by this time it becomes desirable to move the bowels by an enema or a mild laxative. From the contraction of the abdominal parietes the wound has already lost half its length, and the union of its edges proceeds with great rapidity. The ligature comes away in from ten to twenty days.

In the five cases which I have seen terminate fatally, two were dependent on accidental circumstances. Of the three others two appeared to sink suddenly in about thirty-six hours after the operation, from want of power, after a most favorable progress thus far; the other, at the end of three weeks from the formation of an abscess and consequent pyæmia. In the successful cases not a single unfavorable symptom appeared from the beginning to the end; the recovery was perfect, and the cure complete. It is right, however, to observe that the most unremitting attention of an experienced nurse, night and day, is absolutely necessary; indeed, the medical man himself must see the patient, at short intervals, during the first three days. Much discrimination and judgment are required in regulating the temperature of the room and the state of the patient's skin, for in the dread of lowering the temperature too soon, and inducing inflammation, we may easily fall into the opposite error and exhaust the powers of the patient by continuing the high temperature too long.

THE END.

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